92-415

No. _____

Supreme Court, U.S.
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IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1992

GULF CONTRACTING, INC. and
HUGHES MASONRY CO., INC. - - Petitioners

versus

THE UNITED STATES OF
AMERICA - - - - - - - - Respondent

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

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QUESTIONS PRESENTED

1. Whether, in an evidentiary hearing, the Armed Services Board of Contract Appeals must follow its established procedure and apply the Federal Rules of Evidence.

2. Whether, in an evidentiary hearing before the Armed Services Board of Contract Appeals, the Federal Rules of Evidence require the Government to raise a factual challenge to the foundation of an expert opinion by way of cross-examination or whether the Government is privileged to raise such a challenge for the first time in a post-hearing brief, after evidence has been closed.

3. Whether the Armed Services Board of Contract Appeals interpreted a body of governmental regulations in a manner that would deny the Petitioner full and just compensation for interest costs incurred, in derogation of the Fifth Amendment to the United States Constitution.

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No. _____

IN THE

SUPREME COURT OF THE UNITED STATES

October Term, 1992

GULF CONTRACTING, INC. and
HUGHES MASONRY CO., INC. - - - - - *Petitioners*

v.

THE UNITED STATES OF AMERICA - - - *Respondent*

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

The Petitioners, Gulf Contracting, Inc. and Hughes Masonry Co., Inc. (hereinafter, collectively the "Contractors")[1] respectfully pray that a Writ of Certiorari issue to review the Judgment of the United States Court of Appeals for the Federal Circuit entered in this proceeding.

OPINIONS BELOW

This Government contracts case is before the Court by way of Petition for Writ of Certiorari from an Opinion of

[1]There are no parent companies or subsidiaries (except wholly-owned subsidiaries).

the United States Court of Appeals for the Federal Circuit affirming an opinion of the United States Claims Court under the Wunderlich Act (41 U.S.C. §§ 321, 332). This matter was tried before the Armed Services Board of Contract Appeals ("ASBCA"). Three opinions were issued by the ASBCA. In its first opinion, the ASBCA agreed that there was a constructive change to the Government contract. In its second opinion, the ASBCA awarded certain direct costs resulting from the change, but denied the Contractors' other claims for relief. In its third opinion, the ASBCA denied the Contractors' motion for reconsideration. Pursuant to the provisions of the Wunderlich Act, the decisions of the ASBCA were initially appealed to the United States Claims Court, which affirmed the decision of the ASBCA, and then appealed to the United States Court of Appeals for the Federal Circuit.

JURISDICTION

The judgment of the United States Court of Appeals for the Federal Circuit was entered on June 5, 1992. The jurisdiction of this Court is invoked pursuant to the provisions of 28 U.S.C. § 1254.

CONSTITUTIONAL PROVISIONS, STATUTES AND REGULATIONS INVOLVED IN THE CASE

Fifth Amendment, United States Constitution, U.S. CONST. amend. V:

> No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the Militia, when in actual service in time of War or public danger; nor

> shall any person be subject for the same offense to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

Regulation Adopting Federal Rules of Evidence for ASBCA Hearing, ASBCA Rule 20(a):

> 20. *Hearings: Nature, Examination of Witnesses.*
>
> (a) *Nature of Hearings*—Hearings shall be as informal as may be reasonable and appropriate under the circumstances. Appellant and the Government may offer such evidence as they deem appropriate and as would be admissible under the Federal Rules of Evidence or in the sound discretion of the presiding administrative judge or examiner. Stipulations of fact agreed upon by the parties may be regarded and used as evidence at the hearing. The parties may stipulate the testimony that would be given by a witness if the witness were present. The Board may require evidence in addition to that offered by the parties.

Rules 703, 704 and 705 of the Federal Rules of Evidence, FED. R. EVID. 703, 704, 705:

> **Rule 703. Bases of Opinion Testimony by Experts.**
>
> The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.
>
> **Rule 704. Opinion on Ultimate Issue.**
>
> (a) Except as provided in subdivision (b), testimony in the form of an opinion or inference otherwise admissible is not objectionable because it embraces an ultimate issue to be decided by the trier of fact.

(b) No expert witness testifying with respect to the mental state or condition of a defendant in a criminal case may state an opinion or inference as to whether the defendant did or did not have the mental state or condition constituting an element of the crime charged or of a defense thereto. Such ultimate issues are matters for the trier of fact alone.

Rule 705. Disclosure of Facts or Data Underlying Expert Opinion.

The expert may testify in terms of opinion or inference and give reasons therefor without prior disclosure of the underlying facts or data, unless the court requires otherwise. The expert may in any event be required to disclose the underlying facts or data on cross-examination.

Armed Services Procurement Regulations, §§ 15-205.17, 15-205.23, 15-205.24, 15-205.41(d), 15-205.50 (Appendix)

STATEMENT OF THE CASE

Petitioners adopt the Statement of Facts set forth in the opinion of the United States Claims Court in its entirety, with certain additions.

Gulf Contracting, Inc. ("Gulf") was awarded a $6,729,000.00 contract on May 19, 1975, for construction of an enlisted men's barracks complex at Ft. Gordon, Georgia (the "Project"). Hughes Masonry Co., Inc. ("Hughes") was Gulf's masonry subcontractor for the Project. The U.S. Army Corps of Engineers, Savannah District ("the Government") administered the Project under Contract DACA 21-75-C-0015.

Gulf completed the Project 147 days beyond the extended contract completion date; the Government assessed and withheld $29,106.00 in liquidated damages as a result of this delay in completion.

During the course of the Project work, the Government directed Gulf to perform certain welding procedures in a specific sequence other than that originally contemplated by Gulf's contract. In its first opinion in this case, the ASBCA determined that this directive constituted a constructive change to the contract and "caused some delay with regard to [Gulf's] work as well as the work performed by its masonry and erector subcontractors" and that "to the extent [Gulf] incurred greater expense as a result, it is entitled to an equitable adjustment under the contract's 'changes' clause."

The ASBCA remanded the matter to the Contracting Officer "for further negotiation on the question of quantum". Negotiations failed to resolve the question and the parties returned to the ASBCA for resolution of the quantum issue by way of a second evidentiary hearing. In its second opinion, the ASBCA acknowledged that the Government directive resulted in additional direct costs in the sum of $24,362.00, but concluded that Gulf was not entitled to compensation for delay to the Project, loss of efficiency, refund of the assessed liquidated damages, interest expense on borrowings, or expert consultant fees. On Gulf's Motion for Reconsideration, the ASBCA affirmed its earlier decision without further evidentiary hearing.

The evidence presented at the second evidentiary hearing before the ASBCA was highly technical in nature, centering around two, conflicting experts' computerized analyses of a detailed critical path method construction schedule. Boiled down to its essence, the core issue of the case involved whether the masonry work impacted by the Government directive which changed the sequence of construction was on the "critical path" of the Project. If the affected masonry work was on the critical path of the Project

then, minimally, the Contractors are entitled to compensation for delay, loss of efficiency, and return of liquidated damages. If the affected masonry work was not on the critical path of the Project, then the Contractors are not entitled to additional compensation under those theories of recovery. Both expert witnesses submitted voluminous written reports to the ASBCA and testified at the second evidentiary hearing. In its second opinion in this case, the ASBCA rejected the Contractors' expert's report in its entirety and accepted the Government expert's report in its entirety. The ASBCA issued voluminous findings of fact, the substance of which were based primarily upon the content of the report of the Government's expert witness.

Rejection of the Contractors' expert report (hereinafter the "Vinson Report") was based upon a post-hearing Government challenge to the Vinson Report's foundation.

It is undisputed that the foundation of the Vinson Report and the Vinson testimony were not challenged by the Government at the ASBCA evidentiary hearing. There was no objection to introduction of the Vinson Report into evidence. Mr. Vinson was not cross-examined on issues related to the foundation of his report. The challenge to the foundation of the Vinson Report was raised by the Government for the first time in a post-hearing brief, after the close of evidence, when the Contractors were no longer able to present proof to refute a Government challenge to the factual basis of the Vinson Report.

The conclusions of the Vinson Report and testimony corroborated, and in turn were corroborated by, a prior, formal finding of fact issued by the Government Contracting Officer on June 23, 1977, while the Project was actually being built, before there was an issue in controversy be-

tween the Government and the Contractors, and before a proceeding was instituted under the Wunderlich Act. The relevant portion of that finding is as follows:

> ". . . [T]he question of time was discussed in detail and based upon the contractor's NAS [the critical path schedule network] and activities in progress, a determination was made that this work affected critical path activities and delayed completion of all the work under this contract. Installation of bond beams delayed completion of masonry work thereby delaying all future activities on the critical path. It has been determined that twenty-eight (28) calendar days was required for installation of the bond beams; therefore, the contractor is entitled to a time extension of twenty-eight (28) days. As indicated above, the additional work delayed completion of all work under the contract. Therefore, a time extension of twenty-eight (28) calendar days is justified for all phases of work listed in paragraph 1A-02 of the contract specifications." (Parcing added).

In rejecting the Vinson Report and adopting the contrary conclusion of the Government expert, the ASBCA found that the Project was not delayed as set forth in the preceding Finding but, rather, was delayed by "factors within the contractor's purview" and the Contractors' "assignment of priorities in completing the work, conflicts, and interferences...and in efficiencies in...quality control and workmanship." However, the Government presented no evidence at the ASBCA hearing quantifying the impact of these factors on the Project work.

Evidence was presented by both parties of a continuing, heated conflict between Gulf and Hughes during the course of performance of Project work as the impact of the Government sequence change disrupted the work activities of both contractors. However, the Vinson Report considered and gave the Government credit for each instance of con-

tractor Project disruption raised by the Government. The Government presented no evidence linking conflicts between the Contractors to delay of the Project critical path. The Government's entire proof of Project delay was based upon its expert's analysis of computerized Project scheduling records other than the contemporaneous finding of the Government Contracting Officer, quoted above, which the Government expert and the Hearing Officer totally discounted but which was never impeached by the Government at the hearing. The Government's expert admitted in his report that the scheduling documents upon which he relied in forming the basis of his analysis, and which served as the cornerstone of the ASBCA Findings of Fact, were "inaccurate" and "not properly utilized" during the actual course of construction of the Project.

The essence of the ASBCA decision was the Hearing Officer's rejection of the Vinson Report.

A portion of the direct costs sought by Gulf's subcontractor, Hughes, was reimbursement of interest expenses which Hughes had incurred as a result of borrowings during the course of the Project to fund additional labor made necessary by the sequence change. The Affidavit of Robert L. Ward, Jr., Hughes' Vice President, was submitted to the ASBCA in response to a Motion by the Government that the Contractors' claim for interest reimbursement should be dismissed as not allowable as a matter of law. Mr. Ward's affidavit was not refuted by the Government. Paragraphs 5, 6, and 7 of that Affidavit, in part, relay the following:

> "Paragraph 5. As is indicated on attached Exhibit "A", commencing in March of 1976, the Gulf project began experiencing large cash deficits - costs exceeding billings.

Paragraph 6. The cash deficit incurred subsequent to February of 1976 resulted primarily from the necessity of Hughes Masonry Co., Inc. to hire an increased amount of labor and to provide an increased amount of equipment due to sequence changes experienced at the jobsite. These sequence changes required Hughes to work more buildings at more locations on the jobsite, simultaneously, than originally indicated.

Paragraph 7. Funding this cash deficit required Hughes to fully extend its line of credit at the First National Bank of Louisville, Kentucky and to incur further borrowings from the Bank of Montreal . . .".

The basis for Federal jurisdiction in the court of first instance was the Wunderlich Act. 41 U.S.C. §§ 321,332.

ARGUMENT

Questions 1 and 2

The United States Court of Appeals for the Federal Circuit has sanctioned a departure by the Armed Services Board of Contract Appeals and the United States Claims Court from the accepted and usual course of judicial proceedings which calls for an exercise of this Court's power of supervision. "An executive agency must be rigorously held to the standards by which it professes its action to be judged...defined procedure...must be scrupulously observed". *Vitarelli* v. *Seaton*, 359 U.S. 535, 546-47 (1959) (separate opinion by Mr. Justice Frankfurter). Nevertheless, in overseeing the conduct of ASBCA proceedings, the United States Claims Court and the Court of Appeals for the Federal Circuit have disregarded one of the most basic principles of fair trial practice and the Federal Rules of Evidence—the right of a party to have an opportunity to refute the other party's factual allegations.

Evidentiary hearings before Government Contract Appeals Boards are not to be conducted without rules. A defined procedure has been established and the Federal Rules of Evidence have been incorporated into this procedure. However, without the supervision of this Court, the lower Federal Courts would evidently allow Boards of Contract Appeals to operate loosely, and in disregard of their own procedural rules and the Federal Rules of Evidence.

It is very difficult and expensive for the average construction contractor to mount a challenge against the United States Government in a construction contract case. The issues involved in these types of cases are almost always highly technical in nature, require elaborate evidentiary presentations, and involve the employment of expert witnesses. It is impossible for the average contractor to mount an effective challenge to the United States Government if it cannot rely upon the Board of Contract Appeals, the Claims Court, and the Court of Appeals for the Federal Circuit enforcing the published rules of procedure and evidence.

More specifically, in a complex case such as that presented by Gulf and Hughes, where literally hundreds of thousands of bits of data are included in a computerized critical path schedule analysis, it is highly unrealistic to expect an expert witness to recite in direct testimony each and every individual fact upon which he relied in forming the foundation of an expert opinion. The resources of the litigant do not permit it, the time constraints of litigation do not permit it, common sense does not condone it, and, in most instances, the patience of the presiding judge will not allow it. Most importantly of all, the Federal Rules of Evidence, which form the established procedure to be followed in evidentiary hearings before Boards of Contract

Appeals (ASBCA Rule 20(a)), provide that such a presentation of foundation evidence in direct testimony is not necessary.

The Federal Rules of Evidence provide that if an adverse party seeks to challenge the foundation of an expert opinion, the burden is upon the adverse party to raise that challenge by way of cross-examination during the evidentiary hearing so that the expert will have an opportunity to refute the challenge on the record, and so that the trier of fact will have the benefit of reviewing both parties' evidence in support of their positions in a full and complete record, assembled as of the close of the hearing.

Experienced trial counsel are aware of these evidentiary rules and rely upon these rules in attempting to be stewards of their clients' limited resources and in attempting to present clear and concise direct testimony at trial. The result should be the most efficient use of judicial time and the most effective overall presentations at trial.

This is certainly the procedure in trials before United States District Courts and in trials before nearly every state court.

It is evidently not the standard enforced by the United States Claims Court and the Court of Appeals for the Federal Circuit in proceedings before the Armed Services Board of Contract Appeals, the provisions of ASBCA Rule 20(a) to the contrary notwithstanding.

In a post-hearing brief, the Government brought to the attention of the Board a series of three questions and answers from the testimony of Gulf's president. This dialogue indicates that Gulf instructed Mr. Vinson to exclude "other disruptions" from the claim Gulf submitted—in other words,

not to seek money from the Government for disruptions which the Government did not cause.

The Government post-hearing brief also addressed excerpts from the Vinson report which explained that government delays were separated from non-government delays for the purpose of the Vinson analysis. The Government asserted that the foundation of the Vinson Report was improper and that the entire report should be excluded from consideration because this meant that Vinson had been instructed to charge the Government for problems for which the Government was not responsible. In support of this position the Government argued that the Contractors had presented no foundation evidence in their direct testimony at trial contrary to this allegation.

Mr. Vinson was not questioned by the Government on any of these matters. The foundation of the Vinson opinion was not challenged at trial and Mr. Vinson was not cross examined on foundation issues or on his separation of government and non-government delays. There was no objection to introduction of the Vinson Report into evidence. There was no reason for Vinson or the Contractors to suspect that there was any question as to the adequacy of the foundation of the Vinson Report. This issue was raised for the first time by way of argument in the Government's post-hearing brief.

The thrust of the Government's attack goes directly to Mr. Vinson's integrity in his profession. The attack suggests that Mr. Vinson purposely skewed his analysis to exclude any possibility that critical path disruption on the Project being claimed against the Government resulted from causes under the Contractors' control. This implication is totally inaccurate, but Mr. Vinson was not given an opportunity

to defend this attack because he was never challenged by the Government in a manner which would have given him notice that the foundation was being attacked or which would have allowed him an opportunity to respond on the record.

When the ASBCA decision was ultimately written, over two years after the trial was concluded, the record was necessarily incomplete on this issue because the issue was never addressed at trial. Faced with very complicated opposing expert opinions, the Board seized upon the Government's challenge to the Vinson foundation and used it to exclude the Vinson Report in its entirety and accept the Government report in its entirety.

Acceptance of the Government's after-the-fact challenge to the Vinson foundation had the effect of tainting the Contractors' entire case and anointing the Government's entire case with unwarranted credibility. This taint has permeated the post-hearing proceedings by giving the false impression that the ASBCA developed elaborate independent technical findings. In reality, the ASBCA findings spring from the only technical document which remained in evidence after the Vinson Report was rejected—the Government report. This is not an instance where a trial judge fairly and evenly evaluated two conflicting reports, then chose to believe one over the other based upon traditional credibility considerations. This is not a matter of weight or discretion, it is a matter of after-the-fact exclusion.

The Vinson Report was not fairly evaluated because Vinson was never advised of or given a fair opportunity to meet the late factual challenge to his opinion's foundation.

Neither the ASBCA nor the Claims Court nor the Federal Circuit recognized the applicability of Rules 703, 704,

and 705 of the Federal Rules of Evidence to these proceedings. It is very clear that the Board erred by allowing a factual issue to be raised in a post-hearing brief which had not been developed at trial and by disregarding the burden of cross examination imposed by the Federal Rules of Evidence.

> "It is a well-established rule in this Circuit that defenses not raised or litigated in the trial court cannot be heard for the first time on appeal . . . here the matter was not pleaded nor was the case tried on the theory [raised on appeal]." *White* v. *Chicago Burlington and Quincy Railroad,* 417 F.2d 941 (8th Cir. 1989) See also *American Lease Plans, Inc.* v. *Houghton Construction Company, Inc.,* 492 F.2d 34 (5th Cir. 1974). (Parcing Added).

It was improper for the Board to dismiss a Contractors' position based upon an allegedly deficient foundation of an expert opinion when that foundation was not questioned at trial. The Federal Rules of Evidence remove any doubt as to this impropriety.

> "The combined effect of these new rules is to 'place the full burden of exploration of the facts and assumptions underlying the testimony of an expert squarely on the shoulders of the opposing counsel's cross examination...'" *Smith* v. *Ford Motor Company,* 626 F.2d 784, 793 (10th Cir. 1980). See also *Brian* v. *John Bean Division of FNC Corporation,* 566 F.2d 541 (5th Cir. 1978).

The Court of Appeals for the Federal Circuit and the United States Claims Court do not address this issue in their opinions, though the issue was fully briefed and argued below.

In basic fairness, Mr. Vinson and the Contractors should be given an opportunity to set the record straight.

QUESTION 3

The Contractors included in their claim direct interest costs on borrowings which were necessary to fund increased labor and equipment expenses created by the Government sequence change on the project.

The Government moved to strike those costs as unallowable under Section 15-205.17 of the Armed Services Procurement Regulations ("ASPR"). Relevant portions of that section provide as follows:

> 15-205.17. **Interest and Other Financial Costs.** (CWAS-NA). Interest on borrowings (however represented), bond discounts, costs of financing and refinancing capital (net worth plus long-term liabilities), legal and professional fees paid in connection with the preparation of prospectuses, costs of preparation and issuance of stock rights, and costs related thereto, are unallowable except for interest assessed by State or local taxing authorities under the conditions set forth in 15-205.41. (But see 15-205.24.).

In response to the Government's motion, the Contractors filed the affidavit of Robert L. Ward, Jr. and relied upon *Bell* v. *United States*, 404 F.2d 975 (Ct.Cl. 1968), *Dravo* v. *United States*, 594 F.2d 842 (Ct.Cl. 1979), *Framlau* v. *United States*, 568 F.2d 687 (Ct.Cl. 1977), and *Singer* v. *United States*, 568 F.2d 695 (Ct.Cl. 1977), which allow recovery of interest costs which can be tied to borrowings made necessary by Government action.

The Contractors also relied upon analogous ASPR provisions which are set forth in the Appendix to this Petition, §§ 15-205.23, 15-205.24, 15-205.41(d), and 15-205.50.

It is the Contractors' position that Section 15-205.17 can only be reconciled with those cases, with the remainder

of ASPR, and with the Fifth Amendment to the United States Constitution if Section 15-205.17 is interpreted as prohibiting recovery of general business costs incurred in gathering capital to fund a business venture, rather than prohibiting specific interest expenses which occur as a direct cost of Government contract changes.

That is why the "interest" language of Section 15-205.17 is included in the same paragraph with language dealing with bond issues, costs of prospectuses and attorneys' fees. All are related to creation of capital and unrelated to specific changes to Government contracts.

The clear intention of this body of regulations overwhelmingly favors recovery of all legitimate direct costs of changes to Government contracts.

The Claims Court rejected this argument based on the premises that the cited Court of Claims precedent did not involve a specific regulatory provision such as ASPR 15-205.17 and that the affidavit of Mr. Ward did not link the changed contract work to the borrowings.

However, the unchallenged affidavit speaks for itself, and the Fifth Amendment to the United States Constitution transcends individual government regulations.

Any interpretation of this isolated ASPR section which treats documented interest costs necessary to perform a specific Government change order differently from all other costs necessary for the same purpose is inconsistent with the balance of this body of regulations and is also inconsistent with the Fifth Amendment to the Constitution.

In *Armstrong* v. *United States,* 364 U.S. 40, 4 L.Ed.2d 1554 (1960), Mr. Justice Black taught that:

> The Fifth Amendment's guarantee that private property shall not be taken for a public use without just compensation was designed to bar government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole. *Id.*, at 1561.

In *United States* v. *156.81 Acres of Land, etc.*, 671 F.2d 336 (9th Cir. 1982), the provisions of the Fifth Amendment, *Armstrong*, its extensive progeny, and another watershed case in this area, *Monogahela Navigation Company* v. *United States*, 148 U.S. 312 (1982), were utilized to *award interest* to a class of plaintiffs where property had been constructively taken (its use and value having been lost to the plaintiffs). The Court taught:

> Just compensation under the Fifth Amendment means the market value of the property at the time of the taking (citations omitted). Where taking precedes payment, the [Government] must compensate the [plaintiff] for the loss of use of either the property or money between the taking and payment. (citations omitted). *Interest is a substitute for the cumbersome process of computing appreciation of the property during that period.* *Id.*, at 339. (Parsing and emphasis added).

There can be little question that the circumstances of this appeal fall squarely under the provisions of the Fifth Amendment and the many federal court decisions issued incident thereto. The Government has had the benefit of use of the Contractors' money for some seventeen years. During that period of time use of this property has been denied to the Contractors. During five of those seventeen years (1976 through 1981) the Contractor also lost use of collateral and borrowing power. This is a Wunderlich Act case; therefore, the applicable protective provisions of the Contract Disputes Act of 1978, 41 U.S.C. § 601, *et seq.*, do not apply.

Further, the United States Claims Court evidently overlooked Paragraphs 5, 6, and 7 of Mr. Ward's affidavit which clearly link the borrowings in question to "sequence changes experienced at the jobsite." The Claims Court itself acknowledged these sequence changes to be the responsibility of the Government: "It is clear that the quad-t directive disrupted the planned work sequence."

Finally, one must remember that this portion of the Contractors' claim for interest cost was summarily dismissed without the opportunity of a hearing.

The Contractors are entitled to have this issue and the issue of the adequacy of the foundation of the Vinson Report heard upon retrial of this matter.

Respectfully submitted,

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CERTIFICATE OF SERVICE

In accordance with the provisions of Rule 29.3, Rule 29.4(a) and Rule 29.5(b) of the Rules of the Supreme Court of the United States, I hereby certify that three copies of the Petition for Writ of Certiorari to the United States Court of Appeals for the Federal Circuit filed by Gulf Contracting, Inc. and Hughes Masonry Co., Inc. were served upon each of the following individuals, at the addresses shown, by depositing same in the United States mail, first class postage prepaid, on this the 2nd day of September, 1992:

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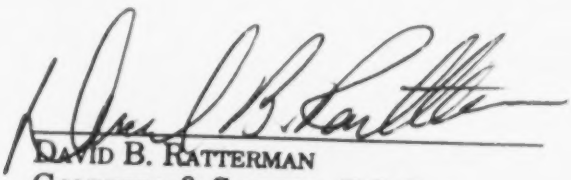

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APPENDIX

NOTE: Pursuant to Fed. Cir. R. 47.8, this disposition is not citable as precedent. It is a public record. The disposition will appear in tables published periodically.

No. 91-5140

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

GULF CONTRACTING, INC., and
HUGHES MASONRY CO., INC., - - *Plaintiffs-Appellants,*

v.

THE UNITED STATES, - - - - *Defendant-Appellee.*

ON APPEAL FROM THE UNITED STATES CLAIMS COURT
IN CASE NO(S). 90-42C

JUDGMENT—Issued as a Mandate June 26, 1992

This CAUSE having been considered, it is ORDERED and ADJUDGED: PER CURIAM: (RICH, MAYER, and CLEVENGER, *Circuit Judges*): AFFIRMED. *See* Fed. Cir. R. 36.

ENTERED BY ORDER OF THE COURT
/s/ Francis X. Gindhart
Francis X. Gindhart, Clerk

Dated: June 5, 1992

No. 90-42C

IN THE
UNITED STATES CLAIMS COURT

GULF CONTRACTING, INC., and
HUGHES MASONRY CO., INC., - - - - - - *Plaintiffs,*

v.

THE UNITED STATES, - - - - - - - - *Defendant.*

CONTRACTS; WUNDERLICH ACT; STANDARD OF REVIEW; GOVERNMENT CHANGE ORDER; EQUITABLE ADJUSTMENT; COMPENSATION DELAY; CRITICAL PATH; WEIGHT OF EXPERT TESTIMONY; LIQUIDATED DAMAGES; INTEREST ON BORROWINGS; EXPERT CONSULTANT FEES.

DAVID B. RATTERMAN, Louisville, Kentucky, for plaintiffs. STEPHEN E. SMITH and GERALD L. STOVALL, Louisville, Kentucky, and GEORGE E. DUNCAN, JR., Atlanta, Georgia, of counsel.

JOAN M. BERNOTT, Washington, D.C., with whom was ASSISTANT ATTORNEY GENERAL STUART M. GERSON, for defendant. ANNE W. WESTBROOK, U.S. Army Corps of Engineers, Savannah, Georgia, of counsel.

OPINION—Filed June 28, 1991

MARGOLIS, *Judge.*

This government contracts case is before the court on cross-motions for summary judgment. Plaintiff contractor entered into a contract to construct buildings for the defendant. The contractor and it subcontractor claim compensa-

tion for delay, return of liquidated damages, and reimbursement of interest expenses on borrowings and expert consultant fees, allegedly caused by a change to the contract. The Armed Services Board of Contract Appeals ("ASBCA") in its first opinion agreed that there was a constructive change to the contract. In its second opinion, the ASBCA awarded direct costs resulting from the change, but denied the contractor's other claims for relief. In its third decision, the ASBCA denied the contractor's motion for reconsideration. The plaintiffs appeal the adverse decisions of the ASBCA under the Wunderlich Act, claiming that portions of the ASBCA's decisions should be reversed as arbitrary and capricious, not supported by substantial evidence, and based on errors of law. The defendant asserts that the ASBCA's decisions are supported by substantial evidence in the record and should not be disturbed. After careful review of the record, and after hearing oral argument, this court upholds the ASBCA's decisions, and accordingly denies the plaintiffs' motion for summary judgment and grants the defendant's motion for summary judgment.

FACTS

Plaintiff Gulf Contracting Inc. ("Gulf") was awarded a $6,729,000 contract on May 19, 1975 for the construction of an enlisted men's barracks complex at Fort Gordon, Georgia ("the project"). Plaintiff Hughes Masonry Company, Inc. ("Hughes") was Gulf's masonry subcontractor for the project. The U.S. Army Corps of Engineers, Savannah District ("Corps") administered the project under Contract No. DACA21-75-C-0115.

The contract was scheduled to be performed between June 16, 1975 and November 7, 1976. The scheduled completion date was extended 195 days through contract modifications to May 21, 1977. Gulf finished the project 147 days beyond the extended contract completion date, completing the gymnasium on October 15, 1977. The gov-

ernment assessed and withheld $29,106 in liquidated damages as a result of this delay in completion.

Gulf submitted a critical path network that sequenced the construction work for government approval. The approved schedule was intended to be used by Gulf to plan, organize and direct the work. Progress on the schedule, as updated during the project, was used to determine Gulf's progress payments. Gulf and the government updated the critical path schedule each month between August 1975 and May 1977. A final update was prepared on October 12, 1977, when the project was nearly complete. Major changes to the approved network during the course of the project, particularly those expected to affect contract completion dates, required written notification of the contracting officer.

Gulf's work on the barracks complex involved construction of seven barracks buildings and seven related support buildings including a gymnasium. As its overall scheme of sequencing work on the project, Gulf planned to prosecute work on the barracks as a group. Work on the support buildings was to take place concurrently and be prosecuted as a separate group. The original critical path schedule identified the support buildings as the critical path to completion of the project. The critical path remained in the support building construction throughout the project with the exception of a shift to barracks in December 1976 associated with a late start of prefabricated shower units.

In erecting the barracks, Gulf elected to lay large planks of pre-cast, pre-stressed concrete, called Quad-Ts, to form the second and third level barracks floors. To anchor the Quad-Ts, Gulf had to weld the Quad-T stems to imbeds in the exterior and interior masonry walls.

Gulf initially contemplated that it would weld the Quad-Ts to both the exterior and interior walls prior to pouring the concrete topping that served to level the floor surface.

The Corps instead directed Gulf to weld the exterior ends, pour topping in the bedroom areas to load the Quad-Ts, allow the topping to cure, and then weld the remaining interior ends and pour topping on the corridor floor areas. This meant that Gulf had to weld and pour topping at two separate times, necessitating the recall of welding, masonry, and concrete work crews multiple times to the same work areas which disrupted its planned production sequence. Gulf needed to erect temporary forms to contain the concrete topping when it was poured in these separate areas, adding about 80 lineal feet of forming to the requirements for each "pod" of the barracks. Certain procedures became more difficult to perform. For example, the interior end welding had to be performed from the floor beneath rather than from above as originally contemplated.

In its first opinion in this case, the ASBCA considered the Quad-T issue and stated in its findings of fact that the government's Quad-T directive "caused some delays with regard to [Gulf's] work as well as the work performed by its masonry and erector subcontractors." *Gulf Contracting, Inc.*, ASBCA Nos. 27221 *et al.*, 84-2 B.C.A. (CCH) ¶ 17,472, at 87,065 (1984). The ASBCA found "that the Government's oral directive was the equivalent of a change order, that it caused [Gulf] to perform in a manner different than it had planned, and that to the extent [Gulf] incurred greater expense as a result, it is entitled to an equitable adjustment under the contract's 'Changes' clause." *Id.* at 87,066.

The Board remanded the Quad-T matter to the contracting officer "for further negotiation on the question of quantum." *Id.* at 87,068. Negotiations failed to resolve the question, and the parties returned to the ASBCA for resolution of the quantum issue. In its second opinion, the ASBCA acknowledged that the Quad-T directive resulted in additional direct costs and awarded $24,362 to Gulf for these costs. However, the ASBCA concluded that Gulf was

not entitled to compensation for delay to the project, loss of efficiency, refund of the assessed liquidated damages, interest expense on borrowings, or expert consultant fees for a report prepared by Vinson & Associates. *Gulf Contracting Inc.*, ASBCA Nos. 30195 *et al.*, 89-2 B.C.A. (CCH) ¶ 21,812 (1989). On Gulf's motion for reconsideration, the ASBCA affirmed its earlier decision denying Gulf compensation for items other than direct costs. *Gulf Contracting, Inc.*, ASBCA Nos. 30195 *et al.*, 90-1 B.C.A. (CCH) ¶ 22,393 (1989).

STANDARD OF REVIEW

The ASBCA's adverse decisions were appealed by Gulf and Hughes to this court, invoking jurisdiction under 28 U.S.C. § 1491(a)(1), and review under the Wunderlich Act, 41 U.S.C. §§ 321, 322. In a Wunderlich Act case, this court "may not take new evidence or redetermine the facts, and limits its review to the record developed before the agency." *Titan Pacific Construction Corp.* v. *United States*, 17 Cl. Ct. 630, 632 (1989), *aff'd mem.*, 899 F.2d 1227 (Fed. Cir. 1990). This court upholds a finding of fact by an agency board of contract appeals unless it is "fraudulent or capricious or arbitrary or so grossly erroneous as necessarily in imply bad faith, or is not supported by substantial evidence." 41 U.S.C. § 321. Senior Judge Harkins in *Titan Pacific Construction* summarized the standard of review as follows:

> The scope of judicial review is narrow, and is limited to whether there was substantial evidence—such evidence as might convince a reasonable man—to support the conclusion reached by the agency officials.
>
> The entire administrative record is before the court, and the plaintiff has the burden of establishing the fact that the record does not support the Board's finding. It is not the court's function to cure plaintiff's deficiency "by an independent excursion along the administrative trail."

Substantial evidence is evidence which could convince an unprejudiced mind of the truth of the facts to which the evidence is directed. Evidence may be substantial even if it is the sole evidence in a case, *e.g.*, expert testimony. The amount of testimony, however, is not necessarily determinative, *e.g.*, if the only evidence is a series of isolated statements in the record.

Reasonable inferences fairly drawn from the evidence are for the administrative tribunal. Where two equally reasonable but contrary inferences might be drawn from the record, and each could be sustained as supported by substantial evidence, the one adopted by the Board should be sustained. Moreover, where conflicting testimony is in the record, the Board's preference will, generally, not be disturbed unless the court can conclude that the findings are not supported by some evidence which qualitatively and, in appropriate circumstances, quantitatively, can be deemed substantial evidence when the record is viewed as a whole.

In limited circumstances the court will decide an issue of fact not decided by the Board, or contrary to the finding made by the Board. Such action is not considered unless the court first concludes that there is no substantial evidence to support the Board's findings. The Board's findings may be supplemented when evidence on the fact question is undisputed, and a contrary finding may be made when the overwhelming weight of the evidence points to one conclusion of fact.

The substantial evidence rule requires consideration of both opposing evidence and evidence that supports the Board's findings. The fact that there is evidence, considered of and by itself, to support the administrative decision is not sufficient where there is opposing evidence so substantial in character as to detract from its weight and render it less that sub-

> stantial on the record as a whole. Where, however, the opposing evidence is *not* overwhelmingly in favor of the opposing view, the view of the facts adopted by the Board, if otherwise proper, will be sustained. If there is adequate and substantial evidence to support either of two contrary findings of fact, the one adopted by the Board is binding on the court, whatever its own evaluation of the evidence might be.

Titan Pacific Construction, 17 Cl. Ct. at 634-35 (citing & quoting *Koppers Co.* v. *United States,* 405 F.2d 554, 556-59, 186 Ct. Cl. 142, 148-51 (1968); other citations omitted).

Conclusions of law are not binding on this court. 41 U.S.C. § 322. However, a board's interpretation of a contract is entitled to careful consideration and accorded great respect. *See, e.g., Fortec Construction* v. *United States,* 760 F.2d 1288, 1291 (Fed. Cir. 1985); *Raytheon Co.* v. *United States,* 2 Cl. Ct. 763, 767 (1983), *aff'd,* 730 F.2d 1470 (Fed. Cir. 1984).

DISCUSSION

In this court, Gulf and Hughes claim that the ASBCA's decisions denying compensation for delay, relief from liquidated damages, and allowance for interest expenses on borrowings and for expert consultant fees, allegedly resulting from the constructive change to the contract, should be reversed as arbitrary and capricious, not supported by substantial evidence, and based on errors of law.

Compensable Delay

The ASBCA found that delay of completion of the project was not caused by the Quad-T directive, but rather by factors within Gulf's purview. Rejecting the analysis of Gulf's expert witness, the ASBCA relied upon the critical path schedule used during the project and upon the government's expert witness, Ockman is reaching this finding. The Board concluded that Gulf "failed to prove that the additional time required for the welding change

exceeded the 'float or slack along the channels involved' so that a compensable time extension is due." Under the Wunderlich Act standard of review, the ASBCA's reliance on the critical path schedule used during the project and the government expert's analysis had substantial basis in fact. Consequently, this court upholds the ASBCA findings with regard to compensable delay.

Expert Witnesses

As the trier of fact, the ASBCA was able to judge the demeanor and credibility of the expert witnesses and to weigh their testimony. The ASBCA rejected the analysis of Gulf's expert witness, Vinson, upon which Gulf relied, as "totally unreliable" and "inherently biased."[1] Instead, the Board chose to believe the government's expert, Ockman, who performed a similar analysis with quite different conclusions. Vinson's report, according to the Board, lacked clarity and jumped from one unsupported conclusion to another. The ASBCA's rejection of the Vinson analysis also stemmed from its determination that Vinson's experience was deficient, particularly due to his lack of formal engineering college courses.

"This reviewing court must accept the Board's evaluation of conflicting conclusions of expert witnesses, unless the testimony is inherently improbable or discredited by uncontrovertible evidence." *Maitland Bros. Co.* v. *United States*, 20 Cl. Ct. 53, 64 (1990). This court upholds the ASBCA's finding that the analysis of Gulf's expert witness, Vinson, was unreliable.

Several factors impair the credibility of Vinson's analy-

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[1]As the trier of fact, the ASBCA is not bound by expert testimony. *See Southwest Marine, Inc. San Pedro Division*, ASBCA No. 28196, 86-2 B.C.A. (CCH) ¶ 19,005, at 95,980 (1986); *U.S. Engineering Co.*, ASBCA No. 28835, 84-2 B.C.A. (CCH) ¶ 17,305, at 86,241 (1984).

sis. Most importantly, the Vinson report is unpersuasive in establishing the quantum of delay and added costs arising from this contract change. In addition, although Vinson's analysis purports to separate government-responsible delays from contractor-responsible delays, it fails to assign values to contractor-responsible delays. In particular, Vinson's treatment of contractor-responsible disruptions to barracks work is not persuasively addressed by either his testimony or the Vinson & Associates report.

Thus, this court finds substantial evidence in the record to support the ASBCA's conclusion that the Vinson analysis is unreliable. This conclusion, as well as derivative conclusions, will not be disturbed.

Critical Path Schedule

There is substantial evidence in the record for the ASBCA's finding that the Quad-T directive did not affect the critical path of the project and consequently did not cause delay in the completion of the project.[2] It is clear that the Quad-T directive disrupted the planned work sequence. However, the plaintiffs fail to demonstrate a causal link between this disruption and the extension of the contract completion date. The testimony established that the barracks work items were not, but for one brief exception, formally on the critical path to project completion. The last building completed was the gymnasium, not a barracks building affected by the Quad-T directive.

The plaintiffs assert that the ASBCA erred in relying on an "inaccurate" critical path schedule to determine activity relationships and durations. However, the critical

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[2]The project can be represented by a network of discrete paths that sequence interdependent tasks or milestones leading to project completion. The critical path, the longest path at any point in time, determines the project's expected completion date.

path schedule is the most logical evidence to consult in evaluating Gulf's progress and plan for the project. The critical path schedule was created and approved in contemplation of contract performance, and was updated regularly throughout the relevant performance period. The government and contractor consulted the critical path schedule in assessing Gulf's progress and providing progress payments. In addition, both Vinson and Ockman used the critical path schedule as the point of departure for their respective analyses. By contrast, "[a]nalyses made after project completion . . . that make adjustments to attain new and revised *projected* scheduling depend on theoretical contingencies. They are of limited value." *Titan Pacific Construction,* 17 Cl. Ct. at 637 (emphasis in original).

Estimate of Barracks Delay

The ASBCA found that the original claim estimate of 44 days of delay associated with added work and disruption caused by the directive was a fair evaluation of the additional time to complete the Quad-T change (8 additional days to complete each "B" barracks and 4 additional days to complete each "A" barracks). The ASBCA adopted the Ockman estimate of 70 days, even more generous than Gulf's initial estimate (10 days for each barracks). The Board rejected Vinson's estimate of 32 days per barracks, after considering Vinson's testimony and Ockman's testimony. Relying on the Ockman analysis of critical path progression, the ASBCA found that the delay caused by added work associated with the Quad-T directive did not affect the project completion date.

This court has carefully "canvassed the entire ASBCA record." *Maitland Bros.,* 20 Cl. Ct. at 60. Viewed as a whole, the record supports the ASBCA's factual findings that delay to the overall project was caused not by the Quad-T directive, but by Gulf's assignment of priorities in completing the work, conflicts and interferences between

Gulf and Hughes, and deficiencies in Hughes' quality control and workmanship. "A contractor typically may not recover if government-caused delay is concurrent with additional delay not caused by the Government, such as weather or contractor delay." *Wilner Construction Co.* v. *United States,* No. 404-89C, slip op. at 3 (Cl. Ct. May 30, 1991).

> The general rule is that '[w]here both parties contribute to the delay neither can recover damage[s], unless there is in the proof a clear apportionment of the delay and expense attributable to each party.' Courts will delay recovery where the delays are concurrent and the contractor has not established its delay apart from the attributable to the government.

Id. (quoting *William F. Klinginsmith, Inc.* v. *United States,* 731 F.2d 805, 809 (Fed. Cir. 1984); other citations omitted).[3]

Liquidated Damages

This court agrees with the ASBCA that the critical path schedule, as a document required by the contract, represented a fair reflection of actual work accomplished. Neither the critical path schedule nor the government's analysis reasonably relied on by the Board showed that barracks work controlled completion of the project. Gulf

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[3]Gulf cites *J.D. Hedin Construction Co.* v. *United States,* 171 Ct. Cl. 70, 347 F.2d 235 (1965), for the proposition that the government must affirmatively establish concurrent delay on the part of the plaintiff. *Hedin* is distinguishable because in that case, "[t]he grant of an extension of time by the contracting officer carrie[d] with it the administrative determination (admission) that the delays resulted through no fault of the contractor." *Id.* at 83, 347 F.2d at 245. Here, their was no grant of overall contract delay that could be construed as an admission by the government of any delay associated with the Quad-T directive.

and Hughes fail to present overwhelming evidence to the contrary. Consequently, this court agrees with the ASBCA that the government's assessment of liquidated damages was appropriate.

Interest on Borrowings

Armed Services Procurement Regulation (ASPR) § 15-205.17 provided that "interest on borrowings . . . costs of financing and refinancing operations . . . are unallowable." The ASBCA concluded that the provision disallows the plaintiffs' claim for interest on borrowings, and cited as support earlier ASBCA decisions which applied ASPR § 15-205.17 to deny recovery of interest on borrowings. Gulf and Hughes claim that the ASBCA erred as a matter of law in concluding that the contractor was not entitled to be reimbursed for interest costs on incurred borrowings required to finance extra labor and equipment necessitated by the Quad-T modification. The plaintiffs contend that the ASBCA's interpretation of ASPR § 15-205.17 is strained, that the unallowable costs that the drafters meant to avoid were general business costs incurred in attracting capital investment to fund a business venture, and that the ASBCA's interpretation would contradict the spirit of ASPR and the Fifth Amendment of the United States Constitution. Gulf and Hughes also assert that earlier ASBCA decisions supporting the ASBCA's denial were not reviewed by the Claims Court, and therefore are not binding precedent in this court.

Although conclusions of law are not binding on this court, 41 U.S.C. § 322, a board's interpretation of a contract is entitled to careful consideration and accorded great respect. *See Fortec Constructors*, 760 F.2d at 1291; *Raytheon*, 2 Cl. Ct. at 767. This court has reviewed the ASBCA decisions on this subject, and concludes that ASPR § 15-205.17 applies in our case and precludes the recovery of interest on borrowings by Gulf and Hughes. *See E.L.*

David Construction Co., Inc., ASBCA Nos. 29225 *et al.*, 89-3 B.C.A. (CCH) ¶ 22,140, at 111,435 (1989) (citing *International Equipment Services, Inc.*, ASBCA Nos. 21104 *et al.*, 83-2 B.C.A. (CCH) ¶ 16,675, at 82,925 (1985)), C.N. Flagg & Co., ASBCA Nos. 26444 *et al.*, 84-1 B.C.A. (CCH) ¶ 17,120, at 85,267 (1983) (citing *Creative Electric, Inc.*, ASBCA No. 26368, 83-1 B.C.A. (CCH) ¶ 16,363, at 81,324 (1983); *Systems & Computer Information, Inc.*, ASBCA No. 18458, 78-1 B.C.A. (CCH) ¶ 12,946, at 63,122-28 (1977); *R.L. Spencer Construction Co., Inc.*, ASBCA No. 18450, 75-2 B.C.A. (CCH) ¶ 11,604, at 55,424 (1975)).

However, Gulf and Hughes also argue that Claims Court precedent allows a contractor to recover interest on borrowings as a direct cost made necessary by a government-ordered change.[4] *See, e.g., Bell* v. *United States*, 186 Ct. Cl. 189, 205-06, 404 F.2d 975, 984 (1968). Under this precedent, as stated by the United States Court of Appeals for the Federal Circuit, "[t]he changed work either must be traced to a specific loan or a necessity for increased borrowing must be shown to have been required by extra work or delay caused by the government." *Gevyn Construction Corp.* v. *United States*, 827 F.2d 752, 754 (Fed. Cir. 1987) (citing *Dravo Corp.* v. *United States*, 219 Ct. Cl. 416, 427, 594 F.2d 842, 847 (1979); *Singer Company* v. *United States*, 215 Ct. Cl. 281, 321-22, 568 F.2d 695, 718-19 (1977)). The contractor must prove the linkage between the changed work and the borrowings. *Dravo*, 219 Ct. Cl. at 428, 594 F.2d at 848 (citing *Singer*, 215 Ct. Cl. at 323-25, 568 F.2d at 719-20). Gulf and Hughes fail to meet this burden. Affidavits attached to their motion for summary

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[4]These cases do not involve a provision such as ASPR § 15-205.17 precluding recovery of interest on borrowings, and therefore are not binding in our case. For purposes of this discussion, the court will assume that these cases are applicable to the recovery of interest on borrowings in our case.

judgment to not tie specific loans to changed work or delay. While the affidavit of Robert L. Ward, Jr., who was comptroller of Hughes during contract performance, does show borrowing around the time of the Quad-T directive, it does not prove that there was a necessity for this borrowing caused by the government-ordered change. "A mere showing of a history of business borrowings and a course of dealings with various banks during the time frame at issue is unsufficient to prove a claim for interest." *Id.* at 429, 594 F.2d at 849 (citing *Singer*, 215 Ct. Cl. at 321-23, 568 F.2d at 718-19). Consequently, Gulf and Hughes are unable to recover interest on borrowings, and the ASBCA's determination is upheld.[5]

Expert Consultant Fees for Report

Gulf claims that the ASBCA erred as a matter of law in denying $87,663.85 for professional consulting fees associated with Gulf's estimate of costs for the Quad-T modification. Gulf asserts that under provisions of the contract and ASPR § 15-205.31(a), whenever a contract change requires modification and updating of network diagrams and machine printouts for settlement of price or time adjustments by the government, the costs of professional and consultant services used in preparing the required modifications and updates are recoverable by the contractor. Gulf

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[5]The plaintiffs also assert that prohibiting the award of interest on borrowings contradicts the spirit of the ASPR and the Fifth Amendment of the United States Constitution. However, the award of interest against the federal government is generally prohibited except where allowed by contract or statute. 28 U.S.C. § 2516(a). " '[T]he immunity of the United States from liability for interest is not to be waived by policy arguments of this nature. Courts lack the power to award interest against the United States on the basis of what they think is or is not sound policy.' " *Library of Congress* v. *Shaw*, 478 U.S. 310, 321 (1986) (quoting *United States* v. *N.Y. Rayon Importing Co.*, 329 U.S. 654, 663 (1974)).

alleges that the government refused to negotiate unless the contractors determined the impact of the constructive change by updating the critical path network diagram and printouts. Without in-house resources to complete the task, Gulf hired Vinson & Associates to perform this work. Gulf maintains that the claimed amount of $87,663.85 does not include costs incurred by Gulf in preparation of its claim or for trial. Although the ASBCA found that the costs incurred by Gulf were claim preparation costs, Gulf argues in this court that there was no basis for the ASBCA's conclusion.

Contrary to Gulf's assertions, the conclusion that the fees are not recoverable is amply supported by the ASBCA's findings of fact. The Board stated that it issued an order "requiring Gulf to furnish Government counsel and the Board with a detailed statement, showing '(a) all of the items and figures which appellate intends to prove from books of account or other records; and (b) all the items and figures which appellant intends to prove by other means.' " The Board found that "Gulf chose to submit the Vinson report to satisfy the Board's order . . ." and that ". . . Vinson testified as Gulf's expert, and relied almost exclusively on his report. . . ." Gulf and Hughes do not effectively dispute these findings. ASPR § 15-205.31(d) provided that "[c]osts of . . . consulting services . . . incurred in connection with . . . the prosecution of claims against the government, are unallowable."

Gulf seeks to recover claim preparation costs by asserting that they were incident to contract performance. *Singer*, 215 Ct. Cl. at 327-28, 568 F.2d at 721. *Singer* stands for the proposition that administrative costs of this nature are related to contract performance only if they benefit contract production or contract administration related to ongoing productive work. *Id.* These expenses were incurred entirely after completion of construction; they bear no rela-

tion to production or administration of an ongoing contract and must be disallowed. *See id.; Wilner,* slip op. at 28.

Earlier ASBCA decisions are in accord. *See, e.g., G.A. Karnavas Painting Co.,* ASBCA No. 22281, 78-2 B.C.A. (CCH) ¶ 13,312, at 65,110 (1978); *G.W. Galloway Co.,* ASBCA Nos. 17436 *et al.,* 77-2 B.C.A. (CCH) ¶ 12,640, at 61,295 (1977). Consequently, this court upholds the ASBCA's determination that the $87,663.85 paid to Vinson is not recoverable by Gulf.

CONCLUSION

The ASBCA's findings of fact are supported by substantial evidence in the record, and the ASBCA's conclusions of law are correct. This court upholds the decisions of the ASBCA. The plaintiffs' motion for summary judgment is denied, and the defendant's motion for summary judgment is granted. The plaintiffs' complaint is dismissed. The clerk is directed to enter judgment accordingly. No costs

/s/ Lawrence S. Margolis
Lawrence S. Margolis
Judge, U.S. Claims Court

June 28, 1991

ASBCA Nos. 30195, 32839 and 33867

ARMED SERVICES BOARD OF CONTRACT APPEALS

APPEALS OF —
GULF CONTRACTING, INC.
Under Contract No. DACA21-75-C-0115

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OPINION BY ADMINISTRATIVE JUDGE TING ON APPELLANT'S MOTION TO ADD COUNSEL, TO SUPPLEMENT THE RECORD AND FOR RECONSIDERATION

We issued our decision in these appeals on 16 March 1989. *Gulf Contracting, Inc.*, 89-2 BCA ¶ 21,812. By letter dated 19 April 1989, Gulf Contracting Inc. (Gulf) forwarded its (1) Motion to Add Counsel, (2) Motion to Supplement the Record, (3) Motion for Reconsideration and Oral Argument, and (4) Memorandum in Support of Motion for Reconsideration. The Government has responded to Gulf's motions. Thereafter, Gulf submitted to reply to the Government's response.

Background

The project which was the subject of these appeals involved the construction of a barracks complex at Fort Gordon, Georgia. The complex included seven barracks, six support buildings and one building addition. Gulf and its masonry subcontractor, Hughes Masonry Company (Hughes) submitted a $1.8 million equitable adjustment claim contending that, as a result of the Government's direction changing the welding sequence of the Quad-T planks (or precast concrete slabs) in the construction of the barracks buildings, the planned construction sequence of the entire project was totally disrupted. The disruptions were said to have caused inefficiencies and delays resulting in increased costs of performance.

In our decision, we found that the approved CPM schedule showed that the critical path of the project ran through the support buildings. We found that during construction Gulf and Hughes chose to concentrate their efforts on the barracks and worked on the "critical" support buildings "when work was not available on the barracks buildings or when [Gulf had] caught up in a specific area." We found Hughes undermanned the project, performed its work as it saw fit "without regard to schedule requirements" and "with no concern to the interest of all." Hughes also had a host of quality control and workmanship problems.

We also found that Gulf, by allowing its mechanical subcontractor to dig a tranch between a barracks and the rest of the project, disrupted Hughes' work.

In concluding that Gulf had failed to prove that additional time required for the welding change exceeded the "float or slack along the [CPM] channels involved" so that a compensable time extension was due, we rejected Gulf's expert (Vinson) analysis as unreliable because it "systematically excluded all delays and disruptions except those allegedly caused by the Government." Such an approach, we concluded, "was inherently biased, and could lead to but one predictable outcome." 89-2 BCA at 109, 759.

A. Motion to Add Counsel

Gulf moves the Board to grant leave for Stephen E. Smith, Esq., to appear as co-counsel. Mr Smith is represented to be a member of the Bar of the State of Kentucky. Absent objection from the Government, Mr. Smith is added as co-counsel.

B. Motion to Supplement the Record

Gulf moves to supplement the record with newly discovered evidence. The evidence, attached to Gulf's motion, was a letter dated 28 June 1976 from Gulf's project manager to Hughes. The letter said that with setting of the precast slabs at the third floor of Barracks Building 28433, Gulf was in a position to project a schedule for completion of the barracks buildings. Gulf stated that the projected completion dates depended upon stabilizing masonry manpower "to where we can consistently expect 60 masons engaged in work on the barracks buildings for this area at this time of the year."

According to Gulf, this letter related directly to the weight given by the Board to "certain correspondence executed by . . . [Gulf's] Project Manager, during the course

of the construction project and much greater emphasis placed by the Board on the Government Consultant's opinion that the contractor planned to perform certain slab work in ten days. . . ." (motion at 1).

Gulf said in its motion that "it did not become aware of the June 28, 1976 correspondence until its involvement in preparation for the accompanying motion to reconsider" (motion at 1).

In *Carolina Maintenance Company,* ASBCA No. 25891, 88-1 BCA ¶ 20,388 (reconsideration of decision reported in 87-1 BCA ¶ 19,571), we followed the standard set out in *United States* v. *41 Cases, More or Less,* 420 F.2d 1126 (5th Cir. 1970) in considering newly discovered evidence. In that case, the Fifth Circuit stated:

> Newly discovered evidence must be evidence in existence of which a party was excusably ignorant, discovered after trial. In addition facts implying reasonable diligence must be provided by the movant. The evidence must be material, and not cumulative or impeaching, and must be such as to require a different result.

420 F.2d at 1132.

In our view, that Gulf was excusably ignorant, and that Gulf had exercised reasonable diligence have not been shown. The time required to perform the "concrete plank, topping, stairs" activities of the barracks buildings was at the heart of the dispute between the parties at trial. How the 28 June 1976 letter was overlooked was not explained. How this letter was found after Gulf received the Board's adverse decision was not explained.

The 28 June 1976 letter merely set forth the project manager's projection on completing the barracks buildings, based on certain assumptions. Gulf now submits the letter to impeach the claim submitted by this same project manager in April 1977. In our decision, we found:

38. The 4 April 1977 claim letter was written a few weeks before two of the "B" barracks were accepted by the Government (see finding 8). By then, Gulf's project manager would have had the opportunity to witness and assess the impact of the change in welding sequence. Accordingly, we find the project manager's comparison to be a fair evaluation of the additional time (though not necessarily a critical path analysis) and material required as a result of the Quad-T change.

We are not inclined to give this letter much weight even if we were to receive it. It certainly would not change the result of these appeals. We conclude the Gulf's so-called newly discovered evidence is no more that impeaching evidence, and would not change the result of these cases. For these reasons, Gulf's motion to supplement the record is denied.

C. Motion for Oral Argument

Appellant moves for oral argument before the three-judge panel that decided the appeals. Its motion is based on "the complexity of the issues addressed in [these appeals] . . . and in particular because of the extreme amount of time which has passed between the hearing . . . and issuance of this Board's decision.

Prior to decision, Gulf was given the opportunity to submit a brief and a reply brief. Its brief was 149 pages long and its reply brief 30 pages. Its motion for reconsideration was 36 pages long. Its reply to the Government's opposition was 10 pages. We believe that Gulf has had ample opportunity to argue the issues in these appeals. Gulf has not told us what it can now accomplish by oral argument that it could not accomplish in the briefs and motions already submitted. Since counsel's argument cannot be considered as evidence in any event, and since counsel has had ample opportunity to tell us his theory of the

cases, we are not persuaded that further arguments would serve any useful purpose.

The hearing in these appeals took place in September 1986. It was followed by a conference in March 1987 during which the parties entered into certain quantum stipulations. The parties completed the submission of reply briefs and the Board closed the record in October 1987. Consistent with the Board's obligations towards other cases, the decision in these appeals was issued in March 1989—15 months later.

As is apparent from the numerous citations to the evidentiary record, the appeals were decided upon a full and complete review of that record. Thus, the passage of time between hearing and decision had no impact on the outcome of the appeals.

For the foregoing reasons, Gulf's motion for oral argument before the decision panel is denied.

D. Motion for Reconsideration

(1) The Vinson Analysis

In our decision, we found Vinson's (Gulf's expert) analysis of the project delays and disruptions to be unreliable because it "systematically excluded all delays and disruptions except those allegedly caused by the Government." In its motion for reconsideration, Gulf contends that we misunderstood the testimony and misunderstood Vinson's analysis.

Finding 92 of our opinion stated:

> In analyzing the impact of the Quad-T change, *Vinson was instructed* to "exclude other disruptions from the claim" (tr. 1/50). We find Vinson's analysis to be inherently biased because it systematically excluded all disruptions except those allegedly caused by the Government.
>
> (Emphasis added)

The conclusion we derived from Finding 92 stated:

> *Vinson said* that he was instructed to "exclude other disruptions from the claim" (finding 92). We have found that Vinson's analysis systematically excluded all delays and disruptions except those allegedly caused by the Government (finding 92). We conclude that his analysis was inherently biased, and could lead to but one predictable outcome. For our purpose therefore, we deem Vinson's analysis to be totally unreliable. (Emphasis added)

The testimony on which we based Finding 92 was given by Daniel E. Whiteman, president of Gulf. In response to his counsel's questions, Whiteman testified:

> Q. Mr Whiteman, there was a Miller Act litigation between Gulf and Hughes on a claim submitted by Hughes while you were building the project. Is that correct?
>
> A. That's correct.
>
> Q. Were there problems on this project that Gulf and Hughes had that weren't related to the Quad T?
>
> A. Yes, there were.
>
> Q. What have your instructions been with regard to the evaluation of these problems and including them or not including them in the claim?
>
> A. We have directed Mr. Vincent's [sic] preparation of his report to be considered, utilizing the absolute optimum that could have been achieved had *any* other disruption not have occurred (emphasis added).
>
> Q. Have you asked him to exclude other disruptions from the claim you are submitting?
>
> A. Yes, we have.

(Tr. 1/49-50)

To the extent that we concluded that Vinson was the witness who said Vinson was instructed to "exclude other disruptions from the claim," it was incorrect. The witness who so testified was, of course, Whiteman. But Finding 92 was correct because it stated that "Vinson was instructed [by Whiteman] to 'exclude other disruptions from the claim.'" Instead of concluding that he said he was instructed to "exclude other disruptions from the claim," our conclusion should simply have stated that "Vinson was instructed to 'exclude other disruptions from the claim.'"

Counsel's questions to Whiteman conveyed the idea that the Miller Act litigation between Gulf and Hughes involved something completely different that the facts involved in the appeals before us. This was not true. According to Whiteman's own subsequent testimony, the Miller Act litigation involved disruption of "electrical work . . . reinforcing work . . . topping work . . . setting of hollow metal door frames" (tr. 1/51), "plumbing rough in" and "electrical rough in" (tr. 1/53), as well as "problems of access to work" (tr. 1/51). Thus, any effort to exclude any Miller Act litigation problems from Vinson's analysis would inevitably exclude contractor-caused delays and disruptions affecting the schedule of this project.

Vinson's own report acknowledged and supported our conclusion. The report stated at page 39, "the analysis *considered only* those aspects of *delay* caused or created through the actions or inactions *of other contractual parties beyond the sphere of Gulf's responsibility.*" If Gulf was responsible for its own actions and the actions of its subcontractors, the only other contractual party beyond the shpere of Gulf's responsibility would be the Government.

We believe Vinson was fully capable of analyzing the well-documented delays and disruptions caused by Gulf and Hughes, and to compare them, toe to toe, with the delays and disruptions said to have been caused by the

Quad-T welding sequence change. Vinson, however, chose to avoid scrutiny of the contractor's acknowledged problems by hiding behind what he called the "model barracks" approach. For purposes of computer analysis, this approach reduced the actual durations of the concrete and masonry work to those of the fastest actual concrete and masonry durations experienced in constructing the "A" and "B" barracks (see finding 87).

Gulf argued that the model barracks approach assessed "to the contractor the maximum amount of cost and time that could be associated with those other problems." That might well be the case. But it did not eliminate the possibility that even in using the fastest actual construction time, appropriate credit had not been given to all contractor-caused delays and disruptions. More plausible would have been for Vinson to assess against Gulf the longest masonry and concrete durations for each barracks. It was easy to gloss over Gulf's and Hughes' problems by shifting the focus to the contractor's best performance model, but we must be persuaded that Gulf has taken full responsibility for its faults, and that the Government was only being asked to pay for what was its responsibility.

Conspicuously absent had been an accounting of precisely for what delays and disruptions Gulf had chosen to take responsibility. It is generally recognized that the trier of fact is not bound by expert testimony and may substitute its own common sense for that of an expert. *Webster* v. *Offshore Food Service, Inc.*, 434 F.2d 1191 (5th Cir. 1970); *U.S. Engineering Company*, ASBCA No. 28835, 83-2 BCA ¶ 16,902, *motion for recon. denied*, 84-2 BCA ¶ 17, 305 (Board rejected expert's cursory and casual analysis of load-bearing capacity of concrete pads in a trench design); *Southwest Marine, Inc., San Pedro Division*, ASBCA No. 28196, 86-2 BCA ¶ 19,005 (Board chose to rely on the testimony of eyewitness rather than expert on the causes of a dry dock failure).

(2) The Critical Path

The Quad-T directive was issued on 17 February 1976 (see finding 27). In analyzing project delays, both Gulf's expert and the Government's expert used the 10 February 1976 CPM update as the closest computer analysis to determine how much float or slack time was available before the barracks would become critical. According to the Government, as of 10 February 1976, each barracks had 36 calendar days of float. According to Vinson, each barracks had 25 calendar days of float. (See finding 109)

Gulf contended in its motion for reconsideration that the Quad-T directive consumed all of the available float available as of 10 February 1976, rendering the barracks buildings critical. Gulf contended that since an earlier CPM project status—10 February 1976—was used for analysis purposes, by the time the Quad-T directive was issued on 17 February 1976, seven days of float had already been consumed before the Quad-T directive was even implemented. Gulf also pointed to a letter in the record and contended that until 29 March 1976 "when welding commenced in accordance with the directive," the welding procedure directed by the Government was "still under discussion" (motion at 18). This period of inactivity presumably consumed the remaining barracks float.

The Construction Quality Control Reports showed that on 13 February 1976, bearing plates for precast slabs were placed at barracks Building 28433, that on 16 February 1976, Gulf erected precast concrete floor slabs for the second floor of barracks Building 28435, and on 17 February 1976, there was further placement of precast concrete floor slabs in barracks Building 28435. (R4 (30195), tab E-6). It is clear from the record that some Quad-T work was ongoing between 10 and 17 February 1976. According to Vinson, as of 10 February 1976, the CPM update showed "the total project progress to be four days ahead of Gulf's anticipated

progress" (exh. A-3 at 48). Just how much float was consumed between 10 and 17 February 1976 has not been established.

There is in the record a 22 March 1976 letter from T.Y. Lin & Associates, consulting structural engineers, to Gary Concrete Products Co., of Augusta, Georgia. This letter expressed the opinion that to "weld down both ends of a precast pretensioned member is a poor practice." The letter suggested that the amount of welding at each end be reduced and only opposite ends of adjacent members be welded. (R4 (27221), tab D-3)

When the Government issued its Quad-T directive on 17 February 1976, Gulf was expected to comply with the directive immediately. The Government did not authorize the solicitation of advice from any structural engineers. It did not suspend work pending investigation of the feasibility of the two-step welding procedure. To the extent Gulf wanted to change the Government's mind, it did so strictly on its own time and at its own risk. As it turned out, the Government continued to require that both ends of the Quad-T planks be welded with the interior welding being performed after placement of the concrete topping (see exh. A-3, at 70-71). If any welding was halted between 17 February to 29 March 1976, the float consumed within that period would not be chargeable to the Government.

The record also does not support the conclusion that no Quad-T erection was done between 17 February and 29 March 1976. The Construction Quality Control Reports showed that Gulf was erecting precast concrete slabs in barracks Building 28433 on 27 February, 1 and 2 March 1976 (R4 (30195), tab E-6).

We conclude, as we did before, that Gulf has not demonstrated that the additional 10 calendar days required (see finding 104) for each barracks due to the welding sequence change exceeded the "float or slack along the chan-

nels involved" so that a compensable time extension is due.

(3) Modification P037

Gulf argued that since the contracting officer granted through Modification P037 a 28-day time extension as an equitable adjustment for installing an intermediate bond beam in the second and third floor walls of the barracks buildings, the Government had determined, and therefore admitted, that the barracks were critical (motion at 15).

The bond beam negotiations memorandum showed the parties negotiated on 24 March 1977 (exh. A-5). This memorandum stated:

> During negotiations, the question of time was discussed in detail and based on the contractor's NAS and activities in progress, a determination was made that this work affected critical path activities and delayed completion of all work under this contract. Installation of bond beams delayed completion of masonry work thereby delaying all future activities on the critical path. It has been determined that an additional twenty-eight (28) calendar days was required for installation of the bond beams; therefore, the contractor is entitled to a time extension of twenty-eight (28) days. As indicated above, the added work delayed completion of all work under the contract. Therefore, a time extension of twenty-eight (28) calendar days is justified for all phases of work listed in paragraph 1A-02 of the contract specifications. During negotiations, the contractor agreed to accept the time extension as stated. The contract completion dates are revised accordingly.

In our decision, we found that the CPM schedule was updated from August 1975 to May 1977. The last (23rd) update was made on 12 October 1977. The monthly updates showed the critical path of the project shifting back

and forth between the chapel and the gymnasium—both support buildings. Only once, as reported in the 10 December 1976 update, did the critical path shift to the barracks due to late start of the prefabricated shower units. The last five CPM updates—February to May, and October 1977—all showed completion of the gymnasium to be critical. (Finding 22)

As the negotiation memorandum showed, the discussions giving rise to the 28-day extension was "[b]ased on the contractor's NAS and activities in progress." Just what analysis was done to lead the contracting officer to conclude on 24 March 1977 that Gulf was entitled to a 28-day time extension had not been explained. In weighing the evidence, we give more weight to the monthly CPM updates. These updates, as far as the evidence showed, reflected the actual work accomplished monthly, and were complied after the parties went through the entire network, building by building, and made corrections to the CPM logics. (See finding 21) The April and May CPM updates both showed the critical path running through the plumbing fixtures in the gymnasium (exh. G-40).

In the light of other evidence to the contrary, Modification P037 was not sufficient for us to conclude that the barracks buildings had become critical and remained critical on the critical path.

(4) Consideration of Prior Claim

As a separate ground for reconsideration, Gulf argued that it was "improper that this claim should be evaluated with reference to prior unacceptable change order requests" (motion at 30).

Gulf apparently had in mind the following conclusion in our decision:

> The Government expert expressed the view that the first stage work could simply be treated as a pre-change

operation on a reduced scale. Thus, ten calendar days would be more than sufficient to do this work. He suggested that the second stage work on each floor would take an additional five calendar days. (Finding 104) Gulf has not given us a satisfactory explanation as to why electrical and plumbing work, which were concurrent work before the change, should now be considered sequential work. *We observe that, when Gulf first filed its claim in April 1977, it did not indicate electrical, plumbing, and rebar work to have been impacted at all. (Finding 107) We observe too, that Gulf's original claim only requested one day per pod for the change. This would add eight calendar days (two floors of four pod each) to each "B" barracks, and four calendar days (two floors of two pods each) to each "A" barracks.* Even if we were to accept this scenario, the additional time required would be far less than what Gulf is now claiming. After weighing the opinions of the experts, we conclude that the welding change, if properly executed, would simply cause Gulf to consume the available float of each barracks. We conclude that Gulf has failed to prove that the additional time required for the welding change exceeded the "float or slack along the channels involved" so that a compensable time extension is due. (Emphasis added)

89-2 BCA at 109, 759

Gulf's April 1977 claim was clearly relevant. It was submitted as a claim, not as an offer of compromise. We see nothing improper in comparing Gulf's earlier position with the position it finally advanced, particularly in a situation where, as here, the expert's analysis had been determined to be biased and unreliable.

Conclusion

Except with respect to its motion to add counsel, all of Gulf's motions are denied.

Dated: September 1989

/s/ Peter D. Ting
Peter D. Ting
Administrative Judge
Member of the Armed Services
Board of Contract Appeals

I *concur*
/s/ William J. Ruberry
William J. Ruberry
Administrative Judge
Acting Chairman, Armed Services
Board of Contract Appeals

I *concur*
/s/ Charles T. Duvall
Charles T. Duvall
Administrative Judge
Acting Vice Chairman, Armed Services Board of Contract Appeals

I certify that the foregoing is a true copy of the Opinion and Decision of the Armed Services Board of Contract Appeals in ASBCA Nos. 30195, 32839 and 33867, Appeals of Gulf Contracting, Inc., rendered in conformance with the Board's Charter.

Dated: 22 September 1989

/s/ Edward S. Adamkewicz
Edward S. Adamkewicz
Recorder, Armed Services
Board of Contract Appeals

ASBCA Nos. 30195, 32839 and 33867

ARMED SERVICES BOARD OF CONTRACT APPEALS

APPEALS OF —
GULF CONTRACTING, INC.
Under Contract No. DACA21-75-C-0115

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OPINION BY ADMINISTRATIVE JUDGE TING

This is a sequel to *Gulf Contracting, Inc.*, ASBCA No. 27721, 84-2 BCA ¶ 17,472. In that case, we held that changing the Quad-T welding sequence in the construction of seven barracks at Fort Gordon, Georgia, constituted a

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*/David B. Ratterman, Esq. of Goldberg & Simpson, P.S.C., of Louisville, Kentucky, appeared as co-counsel with George E. Duncan, Esq., and prosecuted the appeals on behalf of Gulf's subcontractor Hughes Masonry Co.

change to the contract. On remand, the parties were unable to agree on the quantum of adjustment. A hearing was held on the question of whether Gulf was entitled to a time extension beyond those already granted by the Government. At the urging of the Board, the parties were subsequently able to enter into certain quantum stipulations which averted the need for further hearings.

The Contract Disputes Act of 1978 is not applicable to these appeals.

FINDINGS OF FACT

The Contract

1. On 19 May 1975, the Corps of Engineers entered into Contract No. DACA21-75-C-0115 with Gulf Contracting Inc., for the construction of a barracks complex at Fort Gordon, Georgia. The contract was in the original amount of $6,729,000. (R4 (30195), tab E-1)[1]

2. The General Provisions of the contract included the standard clauses for construction contracts such as the "Changes" clause (1968 FEB), the "Disputes" clause (1964 JUN), the "Suspension of Work" clause (1968 FEB), the "Payment of Interest on Contractors' Claims" clause (1972 MAY), and the "Progress Charts and Requirements for Overtime" clause (1965 JAN). (R4 (30195), tab E-4)

3. The barracks complex work included the construction of 13 free-standing buildings, one building addition and related site work. Seven of the buildings are barracks: three type "A" barracks (Building Nos. 28417, 28426 and 28425) and four type "B" barracks (Building Nos. 28432, 28433, 28435 and 28430). The type "B" barracks were approximately twice the size of the type "A" barracks. The remaining buildings were "support" buildings including three service modules, a branch exchange, a company administration and storage building addition, a chapel and a gymnasium. (R4 (30195), tab E-1)

4. Paragraph 1A-02 of the Special Provisions of the contract required Gulf "to complete the entire work ready for use . . . exclusive of grassing and testing of heating and air-conditioning systems" in 510 calendar days from the date of receipt of Notice to Proceed (NTP). Liquidated Damages were fixed by Paragraph 1A-03 at $198 for each day of delay "until the work, exclusive of Grassing and Testing of Heating and Air-Conditioning Systems, is completed or accepted." (R4 (30195), tab E-1)

5. Gulf received the NTP on 16 June 1975 (R4 (30195), tab E-2). November 7, 1976 was therefore established as the original contract completion date[2] (exh. A-49, G-39).

6. During the course of performance, the parties agreed to separate the chapel from the rest of the project in determining contract completion. Modification Nos. P032 and P051 established 25 June 1977 as the chapel completion date. (Exh. G-39 at III 3-4, exh. A-14)

7. Ten of the modifications issued extended the project completion by a total of 195 calendar days. The project completion date was thus extended to 21 May 1977, from 7 November 1976. (Exh. G-39 at III 3-4)

8. The record indicated that as of 12 October 1977, the Government had "accepted" all of the buildings except the chapel and the gymnasium. The dates of acceptance of the various buildings are listed below:

Building	Date of Acceptance
28433 ("B" barracks)	28 April 1977
28435 ("B" barracks)	29 April 1977
28431 (Service Module)	3 May 1977
28434 (Service Module)	3 May 1977
28432 ("B" barracks)	11 May 1977
28430 ("B" barracks)	31 May 1977
28425 ("A" barracks)	16 June 1977
28426 ("A" barracks)	16 June 1977
28422 (Service Module)	16 June 1977
28424 (Adm. Bldg.)	27 July 1977
28417 ("A" barracks)	3 August 1977
28431 (Service Module)	5 August 1977

(Exh. A-14)

9. According to Gulf's letter of 29 December 2977, the gymnasium was actually completed on 15 October 1977, 147 calendar days beyond the extended contract completion date of 21 May 1977 (exh. G-6).

10. The Government assessed and withheld $29,106 as liquidated damages (147 days @ $198 per day) (exh. G-6; tr. 3/118, 5/30-32).

The CPM Schedule

11. Paragraph 63 of the General Provisions "Progress Charts And Requirements For Overtime Work" provided in part as follows:

> (a) The Contractor shall . . . prepare and submit to the Contracting Officer for approval a practicable schedule, showing the order in which the Contractor proposes to carry on the work, the date on which he will start the several salient features . . . and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion at any time. The Contractor shall enter on the chart the actual progress at such intervals as directed by the Contracting Officer.
> . . .

(R4 (30195), tab E-4)

12. The details of the "progress chart" required by the above paragraph were further explained in Paragraph 1C-13 "Contractor-Prepared Network Analysis System" of the "General Requirements," of the contract. It stated that the requirement for the contractor-prepared network analysis system was to "assure adequate planning and execution of the work . . . ." The Network analysis system required diagrams and accompanying mathematical analyses:

> b. (1) Diagrams shall show the order and interdependence of activities and the sequence in which the work

> is to be accomplished as planned by the Contractor. The basic concept of a network analysis diagram will be followed to show how the start of a given activity is dependent on the completion of preceding activities and its completion restricts the start of following activities.

(R4 (30195), tab E-5)

13. Once the network analysis diagram was approved by the contracting officer, it became the "approved schedule" which the contractor was to use "for planning, organizing and directing the work [,] reporting progress, and requesting payment for work accomplished" (see ¶ e, 1C-13, R4 (30195), tab E-5).

14. Paragraph 1C-13 required the contractor to notify the contracting officer in writing if the contractor "desires to make changes in his method of operating and scheduling." The contracting officer "may require the Contractor to revise and submit for approval . . . all or the affected portion of the detailed diagrams and mathematical analysis to show the effect on the entire project" if he considered the changes to be "major" (R4 (30195), tab E-5).

15. Paragraph 1C-13 defined a major change to the approved network schedule as follows:

> [I]f the time estimated to be required or actually used for an activity or the logic of sequence of activities is varied from the original plan to a degree that there is a reasonable doubt as to the effect on the contract completion date or dates. . . .

Minor changes were those that "affect activities with adequate slack time." (R4 (30195), tab E-5)

16. Paragraph 1C-13 defined "float" or "slack" as "the amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any of the activities in the NAS schedule" (R4 (30195),

tab E-5). The paragraph further made clear that "Float or slack is not time for the exclusive use of [SIC] benefit of either the Government or the Contractor." Extensions of time for performance required under the contract General Provisions would be granted *"only to the extent that equitable time adjustments for the activity or activities affected exceed the total float or slack along the channels involved"* (emphasis added) (R4 (30195), tab E-5).

17. Gulf obtained the services of Warner & Associates, Inc. (Warner) to prepare a network analysis schedule required by Paragraph 1C-13. Warner prepared a six-page network analysis schedule which was approved by the Government in August 1975. (Exh. A-28, G-8; tr. 1/40, 63)

18. As planned, the approved network analysis schedule showed that the critical path of the project ran through the support buildings (tr. 2/32). It showed that the chapel—Building 28414—would be the last building to be completed. The last barracks to be completed would be an "A" barracks—Building No. 28425. (exh. A-12)

How the CPM Schedule was Used

19. From the approved network analysis schedule, Warner prepared a computer-generated schedule (CPM schedule). This CPM schedule was updated monthly. (Tr. 1/223)

20. Project managers of the Corps and Gulf met with their own people at the beginning of each month to determine progress made during the past month. The Corps and Gulf would then meet with each other before the payment "cut off" date—the 10th of each month—to "determine the percentages of progress on activities of work as stated in the CPM schedule." (Tr. 3/245)

21. Gulf was permitted to prosecute its work as it saw fit. The Government insisted, however, that the monthly CPM updates reflected actual work accomplished (tr. 3/

114-15). To the extent necessary, the parties went through the entire network, building by building, and made corrections to the CPM logic (tr. 3/247). Thus, to the extent Gulf performed out-of-sequence work, such work would not be paid unless the CPM schedule was adjusted (tr. 3/195). Progress payments were authorized and made on the basis of the monthly CPM schedule updates (tr. 1/225, 3/115). We find that the CPM updated fairly reflected and actual progress of work.

22. The CPM schedule was updated monthly from August 1975 to May 1977. The last (23rd) update was made on 12 October 1977. (Exh. G-40) The monthly updates showed the critical path of the project shifting back and forth between the chapel and the gymnasium. Only once, as reported in the 10 December 1976 update, did the critical path shift to the barracks due to late start of the prefabricated shower units. The last five CPM updates—February to May, and October 1977—all showed completion of the gymnasium to be critical. (Exh. G-39 at III 7-9, G-40)

The Quad-T Directive

23. The dispute in the appeals before us flowed from the construction of the barracks. Both the "A" barracks and the "B" barracks were three storey structures. The two exterior bearing walls of these buildings were separated by two interior bearing walls which formed the corridor on each floor of the barracks (tr. 1/81; exh. A-16). In building these barracks, Gulf elected to use pre-cast, prestressed concrete planks known as "Quad-Ts" to serve as the ceiling and floor at the second and third floor levels. (Tr. 3/42)

24. To secure the Quad-Ts to the exterior and interior bearing walls of the barracks, the stems of the Quad-Ts had to be welded to the imbeds in the masonry walls (tr. 1/83).

25. Since the Quad-Ts were delivered to the job site with a chamber, concrete topping had to be placed on top of the Quad-Ts to provide a "smooth level surface for the floor tiles" (tr. 1/43, 79; exh. D-2).

26. The concrete topping varied in thickness from 3/4 inch at the center to 2 1/2 inches at the perimeter (tr. 1/102). Imbedded in the topping were wire meshes, reinforcing bars, electrical conduits and plumbing risers (tr. 1/79).

27. When Gulf was ready to weld the Quad-Ts in the first barracks, the Corps directed that the interior ends of the Quad-Ts along the corridor walls not be welded until the Quad-Ts were fully loaded with concrete topping (tr. 1/17-18, 85). The Corps gave this directive on 17 February 1976 (exh. A-23; tr. 1/102). Gulf implemented this directive immediately (tr. 3/65).

28. In *Gulf Contracting, Inc.*, ASBCA Nos. 27221 *et al.*, 84-2 BCA ¶ 17,472, we held that this weld-topping-weld procedure directed by the Government "was the equivalent of a change order that . . . caused appellant to perform in a manner different than it had planned, and that to the extent appellant incurred greater expense as a result, it is entitled to an equitable adjustment under the contract's 'Changes' clause."

Additional Work Required by the Quad-T Directive

29. The Quad-T directive caused the welding and topping operation on each floor to be done in two stages instead of one. The first stage included the exterior welding, exterior block infill and bedroom topping. The second stage included the interior welding, interior block infill and corridor topping. Lounge topping was not impacted and could be performed in either stage. (Exh. G-39 at III-19)

30. The directive caused Gulf to have to erect forms between the bedroom and the corridor "to keep the topping from flowing into the wrong places" (exh. A-34; tr. 2/130).

The evidence showed that the directive added some 80 lineal feet of forming to each "pod" of the barracks (tr. 3/66).

31. Because the poured topping of the weld-topping-weld procedure was in the way, Gulf could no longer weld the Quad-Ts to the interior bearing wall from above. Instead, Gulf had to bring its welding equipment inside the building and weld from the corridor beneath. (Exh. A-19; tr. 1/85, 87)

32. Other than requiring some 80 lineal feet of forms per pod along the corridor, the two-step welding procedure did not increase the amount of welding (tr. 2/130), or the quantity of topping used (tr. 2/131). It was still necessary to set the block infill above the interior wall underneath the Quad-Ts (tr. 2/131), to run a rip block down the interior corridor (tr. 2/131), to rough-in electrical conduits and plumbing stacks and place rebars prior to pouring the concrete topping (tr. 2/131).

Gulf's Claims

33. By letter dated 4 April 1977, written over a year after the Government issued the Quad-T directive, Gulf's project manager submitted to the Corps' resident engineer a claim for "compensation of the additional cost of having to install the quad tees after the dead load of concrete topping was applied" (R4 (30195), tab A-1).

34. The claim requested costs of $38,207. This amount was said to include "extended overhead." The claim further requested that the contract performance time be extended 44 calendar days. (R4 (30195), tab A-1)

35. The $38,207 was broken down into (1) material, (2) labor and (3) subcontract costs. Total additional material costs was said to be $15,391. Total labor costs, $7,102. Of the subcontract costs, there were (1) a labor differential of $6,709 for cement finishers, (2) "lost time" costs of $5,000

for masons, and (3) an increased cost of $4,005 for welders required to make additional trips. (R4 (30195), tab A-1)

36. Attached to the 4 April 1977 claim was Gulf's "Comparison Of Standard Quad Tee Operation & Additional Work Required Due To Conditions Insisted Upon By Corps Of Engineers." This comparison showed the following:

STANDARD PROCEDURE

(A) Set tees.

(B) Weld legs of tees—both ends.

(C) Lay masonry around legs of tees and through openings at corridor walls.

(D) Prepare formwork for topping.

(E) Form out bath areas due to waterproofing requirements.

(F) Prepare for topping and pour.

(G) Waterproof bath areas.

(H) Pour topping bath areas.

(I) Resume masonry walls.

OPERATION DUE TO REQUIREMENTS OF CORPS

(A) Set tees.

*(B) Weld exterior legs *only*.

*(C) Lay masonry around exterior legs *only*.

*(D) Prepare form work for topping.

*(E) Form bulkheads at interior corridor wall line. 78 LF per pod (4 pods to one floor of each "B" barracks).

(F) Form out bath areas due to waterproofing requirements.

*(G) Pour topping, bedroom areas *only*.

*(H) Remove bulk head forms at corridor walls.

*(I) Welder returns to weld interior legs. (Increase in cost due to re-set up).

*(J) Lay masonry at interior corridor walls.

*(K) Pour toppings at corridor location. (Increase in square foot finishing price due to size of pour and not being able to pour with balance of topping).

(L) Waterproof bath areas.

(M) Pour topping bath areas.

(N) Resume masonry walls.

*Represents stages of work affected by Corps [Quad-T] requirements.

(R4 (30195), tab A-1)

37. The "A" barracks had two "pods" on each floor. The "B" barracks had four "pods" on each floor. Gulf estimated that the Quad-T directive required one additional day for each pod. The 44-day time extension request was derived from the following calculations:

One day for each Pod.

"B" Barracks—4 Pods Ea. x 4 = 16 x 2 Floors = 32 Days
"A" Barracks—2 Pods Ea. x 3 = 6 x 2 Floors = 12 Days

(R4 (30195), tab A-1)

38. The 4 April 1977 claim letter was written a few weeks before two of the "B" barracks were accepted by the Government (see finding 8). By then, Gulf's project manager would have had the opportunity to witness and assess the impact of the change in welding sequence. Accordingly, we find the project manager's comparison to be a fair evaluation of the additional time (though not necessarily a critical path analysis) and material required as a result of the Quad-T change.

39. Gulf amended its 1977 claim by a claim dated 30 March 1981. this claim sought $233,245 on its own behalf,

and $282,253 on behalf of its subcontractor Hughes Masonry Company (Hughes). The total amount of the claim was $515,498. The claim included home office and job site overhead for 155 calendar days. (R4 (30195), tab A-2)

40. The contracting officer denied Gulf's claim in its entirety by final decision dated 12 April 1982. Gulf appealed the final decision and did not elect to proceed under the Contract Disputes Act of 1978. See 41 U.S.C. § 601 note.

41. A hearing was held in October 1983. The Board's decision, issued in May 1984, held that requiring Gulf to weld the Quad-Ts to the interior masonry walls only after the Quad-Ts had been loaded with topping was a constructive change, and Gulf was entitled to an equitable adjustment to the extent it incurred greater expenses as a result. The Board remanded the appeal to the contracting officer for quantum negotiations.

42. Unable to agree on quantum, Gulf by letter dated 24 September 1984 sought advice from the Board as to how next to proceed. The Board reinstated the appeal and docketed it as ASBCA No. 30195.

43. On 5 October 1984, as a result of a prehearing conference held on 27 September 1984, the Board issued a Memorandum And Order requiring Gulf to submit, as soon as practicable, a detailed quantum statement. The Government was ordered to examine "pertinent books of account and other records . . . and furnish to the attorney for appellant and to the Board a statement showing the results of such examination" within 30 days after receiving Gulf's statement.

44. In April 1985, Gulf submitted as its detailed quantum statement three volumes of analysis prepared by Vinson & Associates, Inc. (Vinson), an outside consultant. As reflected in Vinson's report, the analysis was prepared

at a cost of $87,633.85. (R4 (30195), tab A-2 132)

45. The Vinson report concluded that Gulf and Hughes together are due an equitable adjustment of $1,009,049 plus interest. The summary page of the report showed the following:

SUMMARY OF EQUITABLE ADJUSTMENT

1.	Gulf Contracting Inc.		
	A. Extended Home Office Overhead		$ 85,552
	B. Extended Field Overhead		121,665
	C. Additional Bulkhead Costs:		
	1. Additional Bulkhead Forming	$ 4,490	
	2. Additional Cost of Slabs at Doorways	835	
	3. Cement Finishers Cost Differential	6,709	
	4. Subcontractor (Bentley) welding charge	10,325	
	5. Welded Wire Fabric Cutting	1,927	24,286
	D. Wage Rate Increases		898
	E. Extended Concrete Activity		16,509
	F. Winter Protection		10,000
	G. Efficiency Loss		73,794
	H. Cost to Prepare for Government Review		87,664
2.	Hughes Masonry Company, Inc.		
	A. Extended Home office Overhead		40,858
	B. Extended Field Overhead		167,123
	C. Wage Rate Increases		17,625
	D. Efficiency Loss		229,575
	E. Additional Direct Costs		37,532
Subtotal			913,079
Profit @ 10%			91,308
Bond @ .5%			5,022
Subtotal			1,009,409
Interest Through 03/31/85			825,214
TOTAL EQUITABLE ADJUSTMENT			$1,834,623

R4 (30195), tab A-3)

46. The Board held a prehearing conference on 21 March 1986. It appeared to the Board at that time that the parties were unlikely to resolve quantum unless (1) the extent of delay allegedly caused by the Quad-T directive was first determined, and, (2) the Government first com-

pleted an audit of Gulf's claim. As a result of the 21 March 1986 conference, the Board instructed the contracting officer to determine by way of final decisions, (1) how much time extension, if any, Gulf should be given as a result of the Quad-T change and (2) the quantum of adjustment, if any, to which Gulf would be entitled.

47. In a final decision dated 22 April 1986, the contracting officer found that Gulf was entitled to no time extension as a result of the Quad-T change. Gulf immediately took a protective appeal by notice dated 2 May 1986. The Board docketed this appeal as ASBCA No. 32839.

48. In another final decision dated 15 October 1986, the contracting officer determined that Gulf was entitled to direct costs of $14,978 plus interest as a result of the Quad-T change. The decision also said that should the Board find that Gulf was entitled to any time extension beyond what the Government considered to be the contract completion date, Gulf would be entitled to $100 per day field overhead and $200 per day home office overhead. The contracting officer late amended his decision by letter dated 17 October 1986 to allow $430.73 per day field overhead for Hughes if the Board were to find compensable delay. Gulf took an immediate protective appeal by notice dated 20 October 1986. The Board docketed this appeal as ASBCA No. 33867.

Performance by Gulf and Hughes

49. According to a bar-chart prepared by Warner, Gulf planned to prosecute work on the support buildings—the three service modules, the gymnasium, the exchange, the chapel, and the administration building—as a group. Work on the seven barracks was to be prosecuted at the same time as a separate group. (Exh. A-12; tr. 1/19, 34)

50. The Warner bar-chart showed a plan staggering start of work of the support buildings as follows: Service

Module 28434, Service Module 28431, Service Module 28422, the gymnasium, the exchange and the chapel. Concurrently, Gulf would start the "B" barracks in the order of Building 28435, 28433, 28432 and 28430, followed by the "A" barracks in the order of Building 28426, 28417 and 28425. (Exh. A-12)

51. The Warner bar-chart was a "general-sequencing" scheme from which Warner subsequently prepared "the detail critical path schedule" (tr. 1/48).

52. As between the barracks and the support buildings, Gulf considered the support buildings to be of "secondary importance" (tr. 1/129). Gulf built the support buildings with "forces when work was not available on the barracks buildings or when [it had] caught up in a specific area." It would "move a crew . . . [to the support buildings] to keep them busy so that they didn't leave the project." (Tr. 1/76)

53. Thus, notwithstanding the critical nature of the chapel and the gymnasium—both support buildings—as reflected in the month-to-month CPM updates (see finding 22), Gulf elected to sue the support buildings simply as "float." Vinson, Gulf's expert, acknowledged at the hearing:

> A. That's[3] generally the plan, but the contractor has stated that he wanted to use those buildings as float items to pull voids in his barracks [SIC] operations and pull up to do those buildings.

(Tr.2/123)

55. As far as the barracks were concerned, Gulf contended that its plan was to let the foundation crew pour the foundation and "move to the next adjacent building." The masons would then follow and begin stem walls (tr. 1/76). After the exterior and interior masonry walls reached the second floor level, Quad-Ts would be set and welded at both ends. Thereafter, the masons would erect masonry

walls to the next level (tr. 1/81). The plan was to close-in the building as soon as possible and, "at a future date install the conduits and pump the topping through the windows" (tr. 1/81, 177, 3/92).

56. The approved network analysis schedule which Gulf participated in formulating, and which it admitted to reflect its plan in performing the contract work, showed the activity "concrete plank, topping, stairs 2nd," to be a predecessor activity to the erection of masonry walls on the second floor. A similar sequence was shown for the third floor. (Exh. G-8; tr. 1/65, 187-88, 3/99) Furthermore, this topping-masonry wall-topping sequence applied to all of the barracks (tr. 3/100).

57. Section 2-4-4 of Drawing S-4 "Floor Framing Plan" showed concrete topping *under* the masonry wall. The same drawing showed that "reinforcing and welded wire fabric . . . embedded into the topping and . . . dowelled up." (exh. G-17; 1/234-40, 3/176-92).

58. Gulf contended at the hearing that Hughes would use a rip block[4] as a setting bed that would allow Hughes to run the masonry walls up prior to placing the topping (tr. 3/76-77).

59. The contract drawings did not show rip block (tr. 3/82). Rebars could not be installed or properly embedded as shown in Drawing S-4 of rip blocks were in the way (tr. 3/84-87).

60. If Gulf had planned to use rip blocks to erect masonry walls, that plan was never communicated to the Government (tr. 3/90). Nor was the Government told that Gulf would erect masonry walls before concrete topping was poured (tr. 3/89-90).

61. The approved network schedule showed the "concrete plank, topping, stairs 2nd" to be a 10-day activity. This was to be followed by a 14-day period for erecting

masonry walls on the second floor, and a 10-day period for "concrete plank, topping, stairs 3rd." The schedule showed that during the 24-day period when Gulf was supposed to erect masonry walls up to the third floor, install Quad-Ts and pour topping on that level, Gulf was concurrently supposed to rough-in the electrical conduits and plumbing risers, etc., on the second floor. (Exh. G-8, see Activities 2311-2316)

62. If this sequence of activities was followed, the masons would leave a barracks for 10 days after erecting the ground floor masonry walls, come back for 14 days to erect the masonry walls on the second floor, leave for another 10 days, and then come back for another 14 days to erect masonry walls on the third floor (see exh. G-8; tr. 1/8). We find that the approved network schedule contained within each barracks a build-in disruption in the masons' work.

63. We find that what Gulf claimed to be its plan—erecting the masonry walls straight up before roughing in electrical and plumbing lines and pumping concrete topping through the windows—was inconsistent with what the record reflect to be Gulf's own planned sequence of construction.

64. As far as implementing the approved network schedule with the necessary construction crews was concerned, the most Gulf has been able to show was its president's testimony, in response to a leading question from counsel, that it was his "intention" to "sequence construction and rotate crews" (tr. 1/33; see also, tr. 1/76).

65. Hughes did not start out to be Gulf's masonry subcontractor. In a letter dated 23 July 1975, two months after award of the contract, Gulf advised the Government that N.C. Construction Company would be its masonry subcontractor (R4 (30195), tab D-1). As late as August 1975, Gulf still had intentions of using N.C. Construction Company (exh. G-1, -2, -3; tr. 1/59). The masonry subcon-

tract was not awarded to Hughes until 15 September 1975 (exh. G-4), three months after Gulf received the NTP (finding 5). As a result, Hughes had no input into the network analysis schedule which was approved by the Government in August 1975 (tr. 1/69-70).

66. At the hearing, Gulf showed us what it alleged to be Hughes' crew flow chart (exh. A-26) which hung on the wall of its superintendent's office (tr. 1/140). The most we can say about exhibit A-26 is that it is a bar chart schedule. It is time-scaled across the top, and there are time bars for various activities described on the left. Gulf has not demonstrated that exhibit A-26 reflects implementation by the masons of the approved network schedule (see, exh. G-43; tr. 4/124), and indeed, of any logical plan at all.

67. Hughes began its work in September 1975. For the remainder of that year, Hughes was mainly involved in the "stem walls; getting from the footings to the first floor level." Hughes was beginning to "get the ground floor up to the next level" in the beginning of 1976. According to Gulf's project manager, for the better part of 1975, Hughes did not put men on the job that Gulf felt were necessary to meet the schedule. Nor did Hughes man the job as required by Gulf in early 1976. (Tr. 1/205-09)

68. The record shows that on 2 June 1976, Hughes removed all of its masons from Barracks 28433 "without prior consultation or consent of the General Contractor." According to Gulf, this "knocked our schedule out another week to set . . . slabs." Gulf wrote the following letter to Hughes on 14 June 1976:

> When you want to sit down and honestly make up your mind you are going to cooperate and work with the General Contractor rather than jumping arbitrarily to whatever area of the project that suits you and blaming others for your own deficiencies through in-

> numerable cosmetical [SIC] communications, you will find your task here worthwhile, and we trust profitable.
>
> It is in the interests of all parties to this project to cooperate and participate in the honest and rational exchange of information the benefits all concerned, and yours especially. The Hughes organization has not enjoyed a good relationship in this area and this was directly attributable to the prevailing unilateral supervisory attitude. . . . .
>
> Finally, we would appreciate having the proper supervision constantly here the masonry task requires. Jerry Peloquin, your superintendent, is here this week but his time is occupied with the Ranger Project. You have no allies in this area, not even your own masons, or local union—or anyone who will attest to your professional competency in construction at Fort Gordon at this time. This situation can be remedied and will be when we see you are willing to work with Gulf Contracting.

(Exh. G-16; tr. 1/224)

69. A telegram dated 13 August 1976 showed that Gulf had "been waiting for the scheduled arrival of [the] brick masons on Bldg. 28433 for one solid week and they have not showed up" (exh. G-13).

70. According to Gulf's project manager, Hughes arbitrarily pulled its forces off of one building and jumped to another building without regard to schedule requirements (tr. 1/224). To compound the problem, Hughes, like Gulf, also worked on the critical support buildings "on an as need basis," so that when it "ran out of work, [it] could use those for float" (tr. 1/50).

71. The lack of cooperation and coordination between the prime contractor and the subcontractor was reflected in a letter dated 22 June 1976 from Gulf to Hughes:

> The past three (3) weeks have seen no representation from your organization at these meetings, except through belatedness on some of these days you choose to tell the General Contractor through your superintendent what you intend to do regardless of mutual discussion with fellow sub-contractors.
>
> If this is a further indication of your determination to pursue your policy unilaterally on this project with no concern to the interests of all, we will take steps to remedy the situation.

(Exh. G-14; tr. 1/210-11)

72. The working relation between Gulf and Hughes was not cordial. Gulf's project manager had constant "verbal" and "written" battles with Hughes (tr. 1/128). Cooperation between Gulf and Hughes deteriorated to the point that Gulf could not even submit a detailed completion schedule of contract requirements to the Government because "[Hughes] had refused any communication until contacted by . . . [Gulf's] attorneys" (exh. G-19).

73. Gulf shut down Hughes' work for six weeks to two months because "the quality of their [concrete] work did not meet our expectations at all" (exh. G-15; tr. 1/209-11).

74. Hughes was required to take down an outside masonry wall and rebuild it because its masons failed to put insulation in the wall (tr. 3/48). It mistakenly laid a block instead of a brick in a corner of a building. The block had to be cut out and replaced (exh. G-28; tr. 3/56). In September 1976, Hughes had to rebuild the west wall of the gymnasium because "the weight of the grout on the inside kicked out the whole wall . . . because the mortar had not had a chance to set" (tr. 3/120-21). These and a host of other quality control, workmanship and supervision problems began before the Quad-T change and continued throughout the project (tr. 3/43-63).

75. On the other hand, Hughes also had problems with Gulf. In its Daily Quality Control Report of 10 February 1976, Hughes reported that a "[t]rench being dug between bldg. # 430 [a "B" barracks] and rest of the job is slowing production" (R4 (30195), tab E-5).

76. Its 23 February 1976 report complained about a "loss of 50% productivity today by masons on bldgs. # 426 [an "A" barracks] and 430 [a "B" barracks] because of trench running through jobsite by Menk Mechanical[5]" (R4 (30195), tab E-5).

77. Hughes' 24 February 1976 report stated:

> Trench running through jobsite by Menk Mechanical is causing much undue expense to H.M.C. . . . As of this date H.M.C. has lost 50% production of bldg. 430 ["B" barracks], 425 ["A" barracks], and 425 ["A" barracks] every day this trench has been open. This day H.M.C. had to abandon these buildings due to job coordination which is greatly impaired by this trench. This date twenty men; much needed to finish this project on time, were sent home . . . [Gulf] has been repeatedly notified of this horrendous problem.

(R4 (30195), tab E-5)

78. Hughes' 25 February 1976 report stated:

> Trench is still running through jobsite and is impairing job; coordination, safety and production. Continually we have notified Gulf of H.M.C.'s loss in production and still no move to help solve the problem. This trench has cost 50% production loss every day of operation and this is confirmation of notification of extra cost to be billed to Gulf for loss in efficiency; a breakdown in job sequence. Delay and return on bldg. # 430 of men and equipment. This problem is solely one of mismanagement and misdirection by Gulf Contractors.

(R4 (30195), tab E-5)

79. Hughes continued to report and complain about this open trench on 26 February 1976, and 2, 11, 12, 17, 19, 22, 30 March 1976. The trench remained open on 8 April 1976. (R4 (30195), tab E-5)

80. In contrast to the trench, the record does not show that Hughes complained about disruption and loss of efficiency resulting from the Quad-T change which was directed on 17 February 1976 (see finding 27). Based on Hughes' own reports, we find that the open trench was a major source of disruption and loss of efficiency to Hughes' work at the time the Quad-T change was being implemented.

The Vinson Analysis

81. In support of its claim, Gulf relied on the three-volume analysis prepared by Vinson. Vinson's background was in accounting and management sciences. He had no "formal engineering college courses." (Tr. 2/5) In analyzing the project, Vinson said that he "performed an in-depth review of all project correspondence and data pertinent to the progress of the project and narrowed the scope of analysis to the seven barracks" (R4 (30195), tab A-3 at 39).

82. As part of his analysis, Vinson corrected certain logic errors in the "initial base schedule" and incorporated "crew restraints" to reflect Gulf's plan in staggering the construction of the barracks (tr. 2/41). Neither change was said to have changed the critical path of the project although there was a "slight reduction in the amount of float available to the barracks buildings" (R4 (30195), tab A-3 at 19-20, 29 and 30). Using the 10 February 1976 CPM update "as . . . the actual status of the entire project at the time of the Corps' directive," Vinson found that each of the seven barracks had 25 calendar days of float (R4 (30195), tab A-3 at 50-51; exh. A-32; tr. 2/57).

83. Comparing his reconstructed "as-planned" barracks schedule with the "as-built" barracks schedule, Vinson con-

cluded that completion of concrete deck work and masonry work of the barracks were delayed from May until October 1976 (R4 (30195), tab A-3 at 37-38).

84. Vinson found that Gulf's "original construction intent was to completely erect the load-bearing walls and Quad-T planks for all floors of each building, including the roof deck, prior to placement of the concrete topping at each floor" (R4 (30195) tab A-3 at 47). According to Vinson, the Government was responsible for delaying the project 178 calendar days (R4 (30195), tab A-3 at 111) because the "Corps' directive constituted a definite change to the planned work sequence" (R4 (30195), tab A-3 at 54).

85. Vinson described what he considered to be the impact of the Corps' Quad-T directive as follows:

> Gulf and Hughes were unable to construct the barracks buildings in the sequence originally contemplated. Obviously, the erection sequence changes for both masonry and the Quad-T floor systems dictated that the planned orderly flow of work from building to building would be effected [SIC]. Consequently, Hughes was unable to begin erection of the masonry walls at the second and third floor levels until placement of all the concrete topping in the corridor, lounge and bath areas had been completed. Thus, Hughes was placed in the posture of having to seek work at any area available within the entire project until such time as completed floor slabs were made available for continuance of the masonry work.

(R4 (30195), tab A-3 at 69)

86. Although his report never clearly says, Vinson testified at the hearing that the critical path of the project shifted from the support buildings to the barracks in March 1976 and stayed there until the Spring of 1977 when the barracks were finished (tr. 2/141-42).

87. For purposes of his computer analysis, Vinson reduced the actual durations of the concrete and masonry work to those of the fastest actual concrete and masonry durations experienced in constructing the "A" and "B" barracks (R4 (30195), tab A-3 at 95-97; tr. 2/71-73). He found that Gulf was "entitled to a total contract time extension of 178 calendar days" (R4 (30195), tab A-3 at 111).

88. Gulf's claim included $73,794 in efficiency loss it allegedly suffered and $229,573 in efficiency loss allegedly suffered by Hughes (R4 (30195), tab A-3).

89. Vinson found that prior to the Quad-T directive, Hughes was performing at an efficiency index level of 1.46. This index was derived by comparing the labor hours estimated using the *Means Building Construction Cost Date 1976* with the actual labor hours used (R4 (30195), tab A-3 at 147). he found that, subsequent to the Quad-T directive, Hughes was performing at an efficiency index level of 0.8892 (R4 (30195), tab A-3 at 148).

90. At the pre-directive efficiency date, Vinson found that the masonry work of the barracks ought to be accomplished with 57,861 manhours. The work actually took 95,009 manhours. Vinson attributed the difference—37,148 manhours—to loss of efficiency caused by the Quad-T directive. At an average masonry wage rate of $6.18 an hour, Vinson found that Hughes was entitled to $229,573 die to efficiency loss. (R4 (30195), tab A-3 at 151)

91. As for Gulf, Vinson found that there was a 33% loss in efficiency (R4 (30195), tab A-3 at 131).

92. In analyzing the impact of the Quad-T change, Vinson was instructed to "exclude other disruptions from the claim" (tr. 1/50). We find Vinson's analysis to be inherently biased because it systematically excluded all disruptions except those allegedly caused by the Government.

The Ockman Analysis

93. The Government engaged the services of Ockman & Borden Associates (Ockman) to analyze the delays encountered and to review Vinson's analysis. Ockman has advanced technical and construction management degrees. He is also a civil engineer. (Tr. 4/76) Ockman submitted his report in January 1986 (exh. G-39). This report formed the basis of the Government's defense.

94. Ockman made some minor logic corrections to the approved CPM schedule and used it as a reasonable as-planned schedule (exh. G-39 at II-2). This as-planned schedule showed that the gymnasium had 64 calendar days of float, and Barracks 28430, the most critical barracks, had 138 calendar days of float (exh. G-39 at II-2). He then adjusted the approved CPM schedule by incorporating the impact of five activities he identified as affecting the critical path of the project. He summarized his approach as follows:

> The adjusted schedules were prepared by starting with the reasonable as-planned schedule and chronologically incorporating the time impacts, which occurred during the project, into this schedule. Once a time impact was identified, the original schedule dates were revised to create an adjusted schedule incorporating the time impact. The adjusted schedule was then revised to incorporate the next chronological time impact. In this way, each of the five controlling time impacts has been incorporated into the schedule as it occurred.

(Exh. G-39 at III-4)

95. The first impact Ockman identified was the late start of structural erection in the gymnasium. Gymnasium structural steel was originally scheduled for 29 October 1975. Instead, steel delivery did not start until 9 January 1976, 72 calendar days late. Steel erection finally

took place on 14 January 1976, 77 calendar days late. During this time, the original contract completion date of 7 November 1976 had been extended—by Modifications P003, -007, -008, and -025—to 8 December 1976. The 77 calendar days of delay reduced the gymnasium's float from 64 to 18 days (64 days +31 days - 77 days). Adjusting for the structural steel delay, the gymnasium was projected to complete on 20 November 1976, 18 days prior to the project completion date of 8 December 1976. Exh. G-39 at III-4)

96. The second impact Ockman identified was the late finish of the gymnasium roofing. With erection of the gymnasium structural steel 77 calendar days late, the gymnasium roofing was projected to finish by 12 June 1976. That did not occur. The gymnasium roof was finished 6 October 1976, 116 calendar days late. During this period, Gulf was given 37 calendar days—through Modifications P025, -037 and -039—of time extension to 14 January 1977 from 8 December 1976. Because of the late finish of the gymnasium roof, the gymnasium was now projected to finish on 16 March 1977, 61 calendar days past the adjusted contract completion date of 14 January 1977. (Exh. G-39 at III-5)

97. During this time, completion of the last barracks (28430) also lagged significantly, with a projected completion date of 21 February 1977. This projected completion date was still 23 calendar days earlier than the projected gymnasium completion date of 16 March 1977. (Exh. G-39 at III-5)

98. The third impact Ockman identified was the late start of prefabricated shower units for Barracks 28430. Installation of these units was scheduled to start immediately upon completion of masonry walls and concrete plank above. Third floor masonry was completed 8 October 1976. The roof plank was complete 30 September 1976. Installation of the prefabricated shower units did not begin until

108 calendar days later, on 24 January 1977. In the meantime, the project completion date at 14 January 1977 was extended by 38 calendar days—through Modifications P039, -040 and -043—to 21 February 1977. With the delay in installing the prefabricated shower units, Barracks 28430 was projected to complete on 9 June 1977. This was 27 calendar days after the then projected completion date of the gymnasium on 13 May 1977. At this point, completion of the barracks became critical. (Exh. G-39 at III-6)

99. The fourth impack Ockman identified was the late finish of gymnasium architectural, mechanical and electrical finishes. This work was not finished until 8 September 1977, 132 calendar days late. During this period, Gulf was given—through Modification P035, -036, and -040—89 calendar days of time extension. This time extension extended the contract completion date from 21 February 1977 to 21 May 1977. As a result of the late completion of the gymnasium architectural, mechanical and electrical finishers, the gymnasium was projected to complete on 22 September 1977. The critical path of the project thus shifted back to the gymnasium because the last barracks (28430) was already completed on 27 May 1977. Final inspection of Barracks 28430 was held on 15 August 1977. (Exh. G-39 at III 6-7; tr. 4/202)

100. The fifth impack Ockman identified was the late completion of punch list work in the gymnasium. With the late finish of the architectural, mechanical and electrical finishes, the punch list work was projected to be completed on 22 September 1977. The work was actually completed on 15 October 1977. Final inspection occurred on 21 October 1977. (Exh. G-39 at III-7; tr. 4/203)

101. Unlike Vinson's analysis which leaped from one unsupported conclusion to another, we find Ockman's analysis to be straight-forward and supported by the record that we have reviewed.

Time Impact of the Quad-T Change

102. The approved CPM schedule allowed 10 calendar days for the "concrete plank, topping, stairs" activity. Thus, setting and welding the Quad-Ts, roughing in the electrical and plumbing lines, and pouring bedroom, lounge, bathroom and corridor topping should all be finished within this 10-day duration (exh. G-8, -39 at III-19, and exhibit No 2 to G-39).

103. As reflected in the 10 May 1976 CPM update, Gulf's plan to implement the "concrete plan, topping, stairs" activities was to use approximately three days for Quad-T erection, one day for welding, one day for block infill, and two days for topping. A total of seven or ten calendar days was deemed sufficient for the activity. (Exh. G-39 at III-19, exhibit No. 2 to G-39)

104. We have found that the Quad-T change caused the welding and topping operation on each floor to be done in two stages rather than one (see findings 29-32). In evaluating the time impact of the Quad-T change, Ockman proposed that the first stage work be treated simply as a prechange operation on a reduced scale. Thus, exterior welding, exterior infill, electrical and plumbing rough-ins, and topping the bedroom and lounge areas should take no more than 10 calendar days. As for the second stage work, Ockman contended that Gulf ought to be able to do interior welding in a day, interior infill in a day, and corridor topping in 1 1/2 days for a total of 3 1/2 days or five calendar days. (Exh. G-39 at III-20)

105. Ockman found that the Quad-T change simply increased the "concrete plank, topping, stair" activity on each floor from 10 to 15 calendar days (exh. G-39 at III-20). With two floors in each barracks, the change added a total of 10 calendar days to the "concrete plank, topping, stairs" activities of each barracks (tr. 4/152).

106. In contrast, Vinson contended that as a result of the Quad-T change, it would require 31 calendar days to complete the two-stage welding and topping operation on each floor. Seven of those days were said to be required for electrical rough-ins; and nine days for plumbing rough-ins. (Exh. D-12, exh. A-34)

107. As was the case before the directive, reinforcing steel, electrical and plumbing rough-in work had to be done before topping was poured. This work could be performed as soon as the Quad-Ts were welded and concurrently with the installation of block infills. We find that they should not take an additional 16 calendar days. (Tr. 4/162, 165) In this connection, we note that Gulf's initial claim filed on 4 April 1977 (see finding 36) did not indicate that the electrical, plumbing, and rebar work was impacted at all.

108. We find that Ockman presented a reasonable method for evaluating the time impact of the Quad-T change.

109. The 10 February 1976 CPM update (the one immediately before the Quad-T directive) showed that each barracks had 36 calendar days of float (tr. 4/152). Even Vinson's reconstructed "as planned" schedule showed each barracks had 25 calendar days of float (see finding 82). With this much float, we find that the additional time required to do the two stage welding and topping operation as a result of the Quad-T directive would simply have consumed the available float without impacting the critical path of the project. In other words, we find that the Quad-T directive did not impact the critical path of the project.

Quantum Matters

(a) *Direct Costs*

110. The parties have stipulated that Gulf is entitled to direct cost in the amount of $20,500, resulting from the Quad-T change (tr. 3 of 6 March 1987 conference, ASBCA No. 33867).

111. Gulf's 30 March 1981 revised claim requested profit at 7.5% of the amount recovered (R4 (30195), tab A-2). We find this profit rate reasonable and accordingly allow this rate in our equitable adjustment computation.

112. The parties have stipulated to a bonding cost of 0.5% of the amount of recovery (tr. 3-4, 6 March 1987 conference, ASBCA No. 33867).

113. The parties have stipulated that interest, at the rate established by the Secretary of the Treasury, shall be paid from 14 April 1982 until date of payment (tr. 3, 6 March 1987 conference, ASBCA No. 33867).

(b) *Cost of Analysis Performed by Vinson*

114. From July 1984 to March 1985, Gulf paid Vinson $87,663.85 "to prepare the various CPM schedules required for the analysis of this project by the Corps of Engineers" (R4 (30195), tab A-3 at 132).

115. Vinson prepared a three-volume report in support of Gulf's claim. After the Board reinstated ASBCA No. 27221 as ASBCA No. 30195, the Board issued a Memorandum and Order on 5 October 1884, requiring Gulf to furnish Government counsel and the Board with a detailed statement, showing "(a) all the items and figures which appellant intends to prove from books of account or other records; and (b) all the items and figures which appellant intends to prove by other means." The Board order was issued as a result of a prehearing conference held on 27 September 1984 to "simplify and establish a schedule for further proceedings."

116. Gulf chose to submit the Vinson report to satisfy the Board's order. At the September 1986 hearing, Vinson testified as Gulf's expert, and relied almost exclusively on his report (see tr. 2/52-180, 5/5-47).

117. The Government conceded that throughout the history of Gulf's claim, it had "expected Appellant to support any claims by credible evidence" (Govt's reply br. at 24). The evidence, however, does not support that the Government even remotely suggested that consultant services be required. We find that Gulf obtained Vinson's services in preparation for the prosecution of its claim, and it was purely counsel's own choice to furnish the report to satisfy the Board's prehearing order for a quantum statement.

118. We find that the $87,663.85 incurred by Gulf was incurred in connection with prosecution of its claim against the Government.

(c) *Interest Costs on Borrowing*

119. In March 1987, Gulf advised the Government that it intended to claim the interest costs incurred on borrowings by its subcontractor Hughes. On 24 March 1987, the Government filed a motion to dismiss, contending that (1) it was surprised, and (2) such interest costs were nevertheless unallowable under ASPR 15-205.17.

120. In its 11 May 1987 opposition to the Government's motion to dismiss, Gulf asserted that Hughes had incurred $237,025 in interest expense on $493,000 of borrowings required to finance labor and equipment costs resulting from the Quad-T change. We decided to defer ruling on the motion until we issue this decision.

DECISION

Gulf contracted with the Corps of Engineers to build seven barracks, six support buildings, and a building addition at Fort Gordon, Georgia. Gulf was supposed to complete the project in 510 calendar days from receipt of NTP or by 7 November 1976 (findings 4 and 5). Through a number of modifications, the Government extended the

project completion date by 195 calendar days to 21 May 1977 (finding 7). The Government considered the project completed on 15 October 1977, 147 calendar days beyond the extended completion date (finding 9). For this delay, the Government has assessed $29,106 in liquidated damages (finding 10).

In February 1976, when Gulf was ready to weld the Quad-Ts to the first barracks, the Corps directed that the interior ends of the Quad-Ts not be welded until the Quad-Ts were fully loaded with concrete topping. Gulf implemented this directive immediately. (Finding 27) In *Gulf Contracting, Inc.*, ASBCA Nos. 27221 *et al.*, 84-2 BCA ¶ 17,472, we held that this weld-topping-weld procedure directed by the Government "was the equivalent of a change order that . . . caused appellant to perform in a manner different than it had planned, and that to the extent appellant incurred greater expense as a result, it is entitled to an equitable adjustment under the contract's 'Changes' clause" (finding 28).

Gulf contended that this change in the Quad-T welding sequence shifted the critical path of the project schedule from the support buildings to the barracks (finding 86), causing total disruption to its planned construction sequence, resulting in the incurrence of additional direct costs and costs due to loss of efficiency. It further contended that the welding sequence change delayed completion of its work by 178 calender days (findings 84 and 87), and delayed its masonry subcontractor 218 calendar days (see R4 (30195), tab A-3 at 136). Gulf wanted its equitable adjustment to include extended home and field overhead for itself and Hughes. It also wanted the Government to pay for $237,025 in interest expense incurred on $493,000 of borrowings taken out by Hughes to finance the project (finding 120), and $87,663.85 paid its consultant for his delay analysis report (finding 114).

The Delay Issue

The contract required Gulf to develop a CPM schedule for the project (findings 11 and 12). Gulf's CPM schedule, approved by the Government in August 1975, showed that the critical path of the project ran through the support buildings (findings 17 and 18). While there was nothing wrong with constructing the support buildings as a group and constructing the barracks buildings as a separate group, as Gulf had planned (finding 49), the evidence showed that both Gulf and Hughes elected to concentrate their efforts on the barracks. The support buildings, which were critical, were considered to be of "secondary importance." They were used as "floats," "on an as need basis" for "forces when work was not available on the barracks buildings or when [Gulf had] caught up in a specific area" (findings 52 and 70). Based on the evidence in the record, we conclude that Gulf's own priority in the way it chose to prosecute the work contributed to the late completion of the critical support buildings.

The Government gave Gulf the Quad-T directive on 17 February 1976 (finding 27). According to Gulf's project manager, for the better part of 1975, and in early 1976, Hughes did not put sufficient men on the project to meet the demands of the schedule (finding 67). The evidence in the record showed that Hughes would remove its masons from a barracks "without prior consultation or consent of [Gulf]" (finding 68). Hughes also arbitrarily pulled its forces off of one building and jumped to another building without regard to schedule requirements (finding 70). Furthermore, Hughes failed to attend meetings called by Gulf and went about building the project as it saw fit "with no concern to the interest of all" (finding 71). We conclude that Gulf's problems with Hughes and a host of Hughes' quality control and workmanship problems (findings 73 and 74) contributed significantly to the late completion and increased cost of the project.

Not only did Gulf have problems with Hughes, Hughes also had problems with Gulf. A week before the welding directive, Gulf let its mechanical subcontractor dig a trench between a "B" barracks and the rest of the project (finding 75). The trench remained open until at least the beginning of April 1976 (finding 79). The record is replete with complaints from Hughes that this trench had "cost 50% production loss every day of operation" to a number of the barracks under construction (findings 77-79). We conclude that this open trench too, was a major source of disruption and loss of efficiency to Hughes' work at the time the Quad-T change was being implemented (finding 80).

In support of its claim, Gulf relied on the analysis of its expert, Vinson. Vinson claimed to have performed an in-depth review of all correspondence and data pertinent to the progress of the project (finding 81). If this was indeed the case, we do not believe that Vinson could have missed the well documented performance problems that existed between Gulf and Hughes. Vinson said that he was instructed to "exclude other disruptions from the claim" (finding 92). We have found that Vinson's analysis systematically excluded all delays and disruptions except those allegedly caused by the Government (finding 92). We conclude that his analysis was inherently biased, and could lead to but one predictable outcome. For our purposes therefore, we deem Vinson's analysis to be totally unreliable. To be credible, a contractor's CPM analysis ought to take into account, and give appropriate credit for all of the delays which were alleged to have occurred. *Haney* v. *United States*, 676 F.2d 584 (Ct. Cl. 1982); *Pathman Construction Co.*, ASBCA No. 23392, 85-2 BCA ¶ 18,096 (CPM analysis with "built-in bias" rejected).

Paragraph 1C-13 of the General requirements of the contract made clear that a time extension would only be granted if the time required for performance of the af-

fected activity or activities exceeded the "float or slack along the channels involved" (finding 16). On this project, the CPM update generated immediately before the welding change showed that each barracks had 36 calendar days of float. Even Vinson's reconstructed "as planned" schedule showed that each barracks had 25 calendar days float. (Finding 109)

We have found that the Quad-T directive essentially required the "concrete plank, topping, stairs" activities of the barracks to be performed in two stages instead of one. The first stage included exterior welding, exterior block infill and bedroom topping. The second stage included the interior welding, interior block infill and corridor topping. Lounge topping was not impacted and could be performed in either stage. (Finding 29) Gulf contended that 31 calendar days would be required to complete to two-stage welding and topping operation on each floor. Seven of those days were said to be required for electrical rough-ins; and nine days for plumbing rough-ins. (Findings 106) The Government contended that the change added five calendar days to each floor or 10 calendar days to each barracks (finding 105).

The Government expert expressed the view that the first stage work could simply be treated as a pre-change operation on a reduced scale. Thus, ten calendar days would be more than sufficient to do this work. He suggested that the second stage work on each floor would take an additional five calendar days. (Finding 104) Gulf has not given us a satisfactory explanation as to why electrical and plumbing work, which were concurrent work before the change, should not be considered sequential work. We observe that, when Gulf first filed its claim in April 1977, it did not indicate electrical, plumbing, and rebar work to have been impacted at all. (Finding 107) We observe too, that Gulf's original claim only requested one day per pod

for the change. This would add eight calendar days (two floors of four pods each) to each "B" barracks, and four calendar days (two floors of two pods each) to each "A" barracks. Even if we were to accept this scenario, the additional time required would be far less than what Gulf is now claiming. After weighing the opinions of the experts, we conclude that the welding change, if properly executed, would simply cause Gulf to consume the available float of each barracks. We conclude that Gulf has failed to prove that the additional time required for the welding change exceeded the "float or slack along the channels involved" so that a compensable time extension is due.

We said in *Essential Construction Co., Inc., and Himot Constructors Ltd., Joint Venture,* ASBCA No. 18706 (decided 7 February 1989), *slip op.* at 9:

> it is immaterial that some particular event came along which disrupted certain work or delayed its start or completion. It may well have been that item was not one which would delay the project completion or have any effect on it. We cannot presume that, merely because some extra work was ordered and compensation paid by the contracting officer, there would have been a delay to the completion of the project entitling appellant to an extension in performance time.

Loss of Efficiency

Gulf also contended that the Government was responsible for certain loss of efficiency costs incurred by itself and Hughes. In support of its claim, Gulf again relied on the analysis of its expert, Vinson.

Based on what he was told, Vinson assumed what Gulf said was its plan—completely erect the load-bearing walls and Quad-T planks for all floors of each building prior to placement of topping (findings 55 and 85)—was workable.

What Gulf said was its construction sequence was contrary to the "concrete plank, topping, stairs" sequence reflected in the approved CPM schedule. Gulf itself had submitted this schedule for approval. (Findings 56 and 63) It was also contrary to the requirements of the contract drawings (see findings 57-59). We have also found that the approved CPM schedule contained within each barracks a build-in disruption in Gulf's and Hughes' work (findings 61 and 62). In concluding that the Government was responsible for all of the loss of efficiency, Vinson failed to address the built-in disruption dictated by the CPM schedule. Other problems detailed in the "Performance by Gulf and Hughes" section of our findings (see Findings 49-80) lead us to conclude that even if the Government was responsible for some loss of efficiency, the Government could not be held responsible for all loss of efficiency.

In *Luria Brothers & Co.* v. *United States,* 369 F.2d 701, 713 (Ct. Cl. 1966), the Court of Claims said:

> [T]he mere expression of an estimate as to the amount of productivity loss by an expert witness with nothing to support it will not establish the fundamental fact of resultant injury nor provide a sufficient basis for making a reasonably correct approximation of damages.

Even if a contractor has proved that its loss of efficiency was attributable largely to the Government, its increased costs "are subject to reduction if they include elements for which the Government is not responsible. Such elements could include inadequate supervision, incompetent personnel, nonavailability of materials, and other similar factors: *Sovereign Construction Co. Lts.,* ASBCA No. 17792, 75-1 BCA ¶ 11,251 at 53,606.

With so many different factors which could have impacted efficient performance on the project, and the barracks in particular, Gulf has not established a casual link

between the welding change and the resultant loss of efficiency suffered by itself and Hughes. We note that in contrast to the trench, the record did not show that Hughes complained about disruption and loss of efficiency resulting from the welding change (finding 80). The same is true for Gulf. This leads us to conclude that any loss of efficiency due to the welding change was probably *de minimis*. Based on the evidence in the record, we could not even reach a reasonably correct approximation of damages suffered by Gulf and Hughes as a result of the change.

Liquidated Damages

The approved CPM schedule was updated monthly (finding 19). While Gulf was permitted to prosecute its work as it saw fit, the Government insisted that the monthly updates reflect actual work accomplished. Unless the CPM was so adjusted, Gulf would not have been paid. We have found that the CPM updates fairly reflected the actual progress of the work. (Finding 21) The monthly CPM updates showed that the critical path of the project shifted to the barracks only once during the course of performance. The last five updates all showed completion of the gymnasium to be critical (finding 22).

The Government expert's analysis identified five causes of delay which impacted the critical path of the project. Consistent with the CPM updates, he too, found that the critical path of the project temporarily shifted to the barracks once but shifted back to the gymnasium. The Government analysis took into account all of the time extensions granted by modifications. We have found the Government analysis to be straight-forward and supported by the extensive record before us. (Findings 93-101)

The Government analysis found that the last barracks was completed on 27 May 1977 (finding 99). The gymnasium—the critical support building—was completed on 15 October 1977 (finding 100). These expert findings were

supported by the contemporaneous correspondence the parties exchanged in 1977 (see findings 8 and 9).

Gulf has not shown that the delay between the Government extended contract completion date of 21 May 1977 (finding 7) and 15 October 1977 (finding 9) was excusable. We therefore hold that the Government properly assessed liquidated damages ($29,106) for this 147 calendar day period (finding 10).

Interest Expenses on Borrowings

On behalf of Hughes, Gulf sought $237,025 in interest expenses on $493,000 of borrowings required to finance the Quad-T change (finding 120).

ASPR 15-205.17 "Interest and Other Financial Costs. (CWAS-NA)" provided in pertinent part that:

> Interest on borrowings (however represented) . . . costs of financing and refinancing operations . . . are unallowable.

We have consistently applied this principle with few exceptions. *C.N. Flagg & Co., Inc.*, ASBCA Nos. 26444, 26655, 84-1 BCA ¶ 17,120 at 85,267, *citing, Creative Electric, Inc.*, ASBCA No. 26368, 83-1 BCA ¶ 16,363; *Systems & Computer Information, Inc.*, ASBCA No. 18458, 78-1 BCA ¶ 12,946; R.L. *Spencer Construction Co., Inc.*, ASBCA No. 18450, 75-2 BCA ¶ 11,604. Accordingly, we hold that Gulf is not entitled to recover the interest paid on borrowings.

Cost of Analysis Performed by Vinson

ASPR 15-205.31(d) provided in pertinent part that:

> Costs of . . . consulting services . . . incurred connection with . . . the prosecution of claims against the Government, are unallowable.

We have found that the $87,663.85 paid Vinson was incurred in connection with prosecution of its claim against

the Government. Accordingly, we hold that this item of Gulf's claim is unallowable. *G.A. Karnavas Painting Co.*, ASBCA No. 22281, 78-2 BCA ¶ 13,312; *G.W. Galloway Co.*, ASBCA Nos. 17436 *et al.*, 77-2 BCA ¶ 12,640.

Direct Costs

We recognize that the welding change did require Gulf to incur additional direct costs. For example, additional forming was required (finding 30). The welders had to make return trips to the barracks to weld the interior ends of the Quad-Ts (finding 31). Topping and masonry work had to be done in two stages (finding 29).

Based on the parties' stipulations, we compute the quantum of equitable adjustment as follows:

Direct Costs (finding 110)	$20,500
Overhead @ 10%[6]	2,050
Profit @ 7.5% (finding 111)	1,691
Bond @ 0.5% (finding 112)	121
Total	$24,362

We conclude that Gulf is entitled to recover, as a result of the Quad-T welding sequence change, $24,362 plus interest (computed in accordance with the stipulation set forth in finding 113)[7]. In all other respects, the appeals are denied

Dated: 16 March 1989

/s/ Peter D. Ting
Peter D. Ting
Administrative Judge
Member of the Armed Services
Board of Contract Appeals

I *concur*
/s/ William J. Ruberry
William J. Ruberry
Administrative Judge
Acting Chairman, Armed Services
Board of Contract Appeals

I *concur*
/s/ Charles T. Duvall
Charles T. Duvall
Administrative Judge
Acting Chairman, Armed Services
Board of Contract Appeals

I certify that the foregoing is a true copy of the opinion and decision of the Armed Services Board of Contract Appeals in ASBCA Nos. 30195, 32839 and 33867, Appeals of Gulf Contracting, Inc., rendered in conformance with the Board's Charter

Dated: 21 March 1989

/s/ Joe D. Miller
Joe D. Miller
Recorder, Armed Services
Board of Contract Appeals

NOTES

1. Documents relating to delay issues are contained in the Rule 4 files for ASBCA No. 30195. They will be cited as "R4 (30195), tab __." Documents relating to quantum issues are contained in the Rule 4 files for ASBCA No. 32829. They will be cited as "R4 (32839), tab ___." or "Supp. R4 (32839), tab ___." The Government's hearing exhibits are designated as "Exh. G-1," etc., and Gulf's hearing exhibits are designated

as "Exh. A-1," etc. Demonstrative sketches made during the hearing are designated as "Exh. D-1" etc.

2. The approved CPM schedule allowed 28 calendar days for final testing of mechanical systems after 7 November 1976 (exh. G-39 at I-6).

3. The witness was referring to exh. A-12.

4. A rip block is an 8 x 16 block cut in a small piece used as a filler "to bring the courses up to where the joints would line-up" (tr. 3/87).

5. The Menk Company, Inc., was Gulf's mechanical subcontractor (exh. G-39 at I-2).

6. The parties did not stipulate to an overhead rate to be applied to direct costs. We believe 10% is generous.

7. We do not know whether a part of this amount had already been paid. We note that in the contracting officer's final decision dated 15 October 1986, he said he was directing his staff to "initiate a modification in the amount of $14,978, plus interest" to cover the direct costs of the Quad-T change.

[EXCERPT FROM 84-2 BOARD OF CONTRACT APPEALS DECISIONS]

[¶ 17,472] Gulf Contracting, Inc.

ASBCA Nos. 27221, 27521, 28158. May 31, 1984. Contract No. DACA21-75-C-0015.

Modification—Constructive Changes—Order of Work

A contractor's claim for additional compensation was sustained because the government had directed an unnecessary change in his planned work sequence. The work included the installation of prestressed concrete planks to be topped with cement after installation. The Contractor had begun performance by welding both ends of the planks in place and then pouring the topping. The government had noted this procedure and then directed him to weld the exterior end, place the topping, and then weld the interior end. This procedure caused delays for which the contractor sought compensation.

Performance—Impossibility—Commercial Impracticality

A performance technique specified by a contract, and initially insisted upon by the government, was not so difficult as to be commercially impracticable. The dispute concerned material to be used to fill hollows in concrete-block walls. The contractor contended that the material specified in the contract was too coarse to easily fit into the narrow chambers in the walls, which already had reinforcing steel in them. The evidence showed that the work was difficult, but not impossible. The government had ultimately permitted a substitute material to be used after it had been satisfied that the new material was suitable.

Interpretation of Contracts—Clear Meaning—Taxes

A contractor's claim for reimbursement of taxes that had increased during performance was denied because the contract language clearly precluded such recovery. The

appropriate contract clause stated that all taxes had been included in the contract price. Thus, no postaward increase could be considered. Furthermore, the Permits and Responsibilities clause placed the risk of changes in local laws including tax provisions, on the contractor.

For the appellant: Duncan & Mangiafico, Atlanta, Georgia, by George E. Duncan, Jr. For the government: Col. Daniel A. Kile, JAGC, Chief Trail Attorney, and Anne Westbrook, Engineer Trial Attorney, U.S. Army Engineer District, Savannah.

Opinion by Administrative Judge Arnavas with Administrative Judges Andrews, Jr., and Ruberry concurring.

[Text of Opinion]

These appeals involve appellant's allegations (1) that the Government constructively changed the contract by its directives regarding the installation of precast Quad-T planks (ASBCA No. 27221), and its directives regarding the concrete to be used as reinforcement in face brick and concrete block (ASBCA No. 28158; and (2) that appellant is entitled to an equitable adjustment because of an increase in a local sales tax that occurred during contract performance (ASBCA No. 27521).

Only the question of entitlement is before the Board.

Findings of Fact—General

The subject contract was awarded to the appellant on May 19, 1975. It was in the initial amount of $6,729,000 and was for the construction of a barracks complex at Fort Gordon, Georgia (R4, tab E-1). The project included 14 structures, 7 of which were barracks buildings with the remainder consisting of a gymnasium, a chapel, several service modules, and administration building and an enlisted building (Tr. 1/31).

The contract contained the standard General Provisions of construction contracts including a "Changes" Clause and "Disputes" clause (R4, tab E-4).

ASBCA No. 27221—Quad-T Claim

Findings of Fact

The main Quad-T planks were made of precast, prestressed concrete. They were 10 feet wide and 25 feet long and consisted of four stems. The Quad-Ts formed the support for the ceilings and floors in each of the four barracks buildings. A 2½" concrete topping was required to be placed on each Quad-T surface (Tr. 1/32). The topping was necessary to create a wearing surface and to level the precast slabs and prepare them to receive a vinyl floor covering. The lack of level was due to the camber in the Quad-Ts which varied from 1⅛" to 1¾" and reached its high point at the middle of the Quad-T (Tr. 1/33).

The specifications were silent regarding the sequence for welding the two ends of the Quad-Ts into place and applying the concrete topping; that is, they did not require welding of one end and loading with the concrete topping before welding of the remaining end, nor did they prohibit the welding of both ends prior to loading with the concrete topping (Tr. 1/36, 2/36). Appellant had planned during the bidding stage to perform the interior and exterior welding in a single operation prior to pouring the concrete topping— ". . . that is the way we have always done it. There would have been no reason to have done it any other way" (Tr. 2/54-55).

Appellant followed its planned procedure in securing and welding the Quad-Ts in the first barracks building. It was then instructed by the Government's assistant resident engineer to discontinue welding both ends before placing the concrete topping. As appellant's field quality control representative put it:

"We were instructed to place the quad-tees, weld the exterior weld plates in place, then form and place the concrete topping. This forced us to place . . . the topping in the bedroom and because the weld plates in the corridor side we could not weld." (Tr. 1/38)

The Government's resident engineer and his assistant both acknowledge that they observed the Quad-Ts being welded in place on one operation (Tr. 2/8-9, 214). They believed this procedure to be "rather strange" and not a good construction practice, and after consultation, with their structural engineers, they directed appellant to separate the welding process with loading of the concrete topping (Tr. 2/9-11, 214). They did not make any calculations to determine if the horizontal stress exerted by appellant's procedure required this modification in the welding process (Tr. 2/9, 13). Nor was their action based on the belief that appellant had design responsibility under the contract (Tr. 2/267). Both Government representatives deny instructing appellant to first make the exterior weld and then the interior weld (Tr. 1/180-81, 2/11). The assistant resident engineer stated " . . .we directed you could weld one end or the other. We didn't particularly care which end you welded" (Tr. 1/181). However, an excerpt from appellant's daily log for February 17, 1976, contradicts this, it states, in part, that appellant was directed to:

"Set slabs, weld anchors at outside walls, place topping, then weld inside anchorages. . . ." (Exh. A-9)

Appellant objected to the weld-topping-weld modification directed by the Government and preformed some job site tests designed to indicate that this modified procedure was not necessary (Tr. 1/40-43). The Government however, remained unpersuaded, and appellant complied with its directive and installed the remaining Quad-Ts by first welding the exteriors, then pouring the concrete topping, then welding the interiors. This caused some delays with

regard to appellant's work as well as the work performed by its masonry and erector subcontractors (Tr. 2/46-50).

Appellant's expert, a structural engineer, testified, in essence, that the horizontal forces exerted by pouring the lightweight concrete topping on the Quad-T surface had no real effect on the Quad-Ts camber and would cause only an insignificant movement of the Quad-T itself—"(it) . . . caused a change in length at the end of a beam of approximately the thickness of a human hair" (Tr. 2/104-05). He concluded that the directive changing the welding sequence was an "insignificant factor," with regard to the design of the barracks buildings (Tr. 2/106-07). The Government's assistant resident engineer acknowledged that, assuming the amount of force transmitted by the concrete topping was insignificant, the directive to modify appellant's welding sequence was not good engineering practice (Tr. 1/191).

ASBCA No. 27221

Decision

There is no disagreement that the contract did not specify the weld-topping-weld procedure ultimately utilized by appellant in installing the Quad-Ts. Similarly, there is no disagreement that the Government required this order of construction after observing appellant welding both ends of the initial Quad-T before pouring the concrete topping. The parties do disagree regarding whether the Government required that the exterior weld be made initially. We believe that the weight of the evidence supports such a finding. Indeed, the final decision (albeit written by a successor contracting officer some years after the fact) tacitly acknowledged this when it stated "I also agree that the Corps directed that the interior welds should not be made until the lightweight topping has been poured and cured." We conclude that the Government ordered the appellant to perform this aspect of its work in a manner different from that which it had originally planned and that the order

required that the exterior welds be made prior to the interior ones.

We also disagree with the Government's contention that the appellant, under-section 3 of the specification assumed design responsibility for the Quad-T aspect of the project, and that its failure to furnish adequate calculations of the horizontal load factors involved caused the Government, out of an abundance of caution, to order the weld-topping-weld procedure. The Government has not presented any persuasive evidence to support this contention or to show that such calculations were requested. Nor has there been any indication that appellant's shop drawings or other submittals were rejected or criticized because of the absence of horizontal load calculations. Nor did the Government, prior to issuing its order, perform any calculations of its own to demonstrate that a departure from appellants' weld-weld-topping procedure was necessary. Indeed, the Government's resident engineer stated that his order was issued on the basis of what he perceived to be proper construction practice and not with a view toward defining the parties' responsibilities under section 3 of the specification.

In summary, we find that the Government's oral directive was the equivalant of a change order, that it caused appellant to perform in a manner different than it had planned, and that to the extent appellant incurred greater expense as a result, it is entitled to an equitable adjustment under the contractor's "Changes" clause.

ASBCA No. 28158—Reinforcement Concrete Claim

Findings of Fact

Appellant's second claim relates to difficulties that it experienced in complying with the requirement to reinforce the inner cells of the concrete block and bricks utilized in the construction of the barracks buildings (Tr. 1/70-71). These inner cells were relatively small. For the blocks

they were approximately 3⅝" wide and 4⅝" long. For the bricks they were 2⅜" wide ann 4⅝" long (Tr. 1/71, 78). The areas within the block and brick cells were further restricted by steel reinforcing bars (Tr. 2/73-74).

The "masonry" section of the contract specification provided in paragraph 9.14.8 that:

"*Units containing reinforcement* shall be filled solid with Class A or Class B concrete in conformance with Section 'Concrete,' using ½ inch to No. 4 nominal size coarse aggregate." (R4, tab E 5)

The "concrete" section of the specification in paragraph 9.1, defined Class A concrete as having a compressive strength, after 28 days of 3,000 psi, and Class B concrete as having a compressive strength, after 28 days, of 2,500 psi (R4, tab E-6). There are variations on the types of concrete that can be classified as Class A or Class B, since different mixes can produce the same strength. One of the variations can be in the size of the aggregate used (Tr. 2/249).

Appellant's masonry subcontractor had experienced a problem with the concrete aggregate used for reinforcement on a similar project and it "forsaw" that the same problems might also develop on this project (Tr. 1/76).

On January 15, 1976 the COR denied a request from appellant to authorize the use of a 2,500 psi grout in lieu of Class A or B concrete (R4, tab D-3). Appellant protested the denial of permission in its letter of February 16, 1976 because of its "knowledge that the aggregate size in Class A or B concrete specified does not permit efficient filling of masonry unit cells . . . because of insufficient clearance between the reinforcing steel and inside dimensions of the masonry units." It agreed, however, to proceed as directed (R4, tab D-4). Other letters were exchanged, and on March 9, 1976, appellant requested permission to use a pumpcrete

mix containing no coarse aggregate and having a flow or viscosity capability of 100% (R4, tab D-9). The Government returned this request without action and requested additional information regarding this alternative (R4, tab D-8). The requested information was furnished by appellant on March 12, and included a test report dated March 12, 1976 for a 3000 psi concrete (exh. G-50). The Government approved this alternate concrete mix on March 15, 1976.

Appellant contends, that a test report for an alternate pumpcrete mix with a 28 day psi in excess of 4000 and with a modified fine aggregate, was presented to the Government for approval on January 7, 1976 (exh. A-11). There is no credible evidence that this test report was, in fact, so submitted, and the COR denies having reviewed it (Tr. 2/256-57). We find that while this report may have been presented to appellant by its masonry subcontractor, the record does not support a finding that it was formally submitted to the Government for consideration.

ASBCA No. 28158

Decision

The main thrust of appellant's argument with regard to this claim is that the Government's initial requirement with regard to reinforcing the concrete blocks and brick was unnecessary, extremely cumbersome and time consuming, that it requested, early on, that a substitution for the coarse aggregate be made, and that the Government delayed, without a valid excuse, before eventually agreeing to appellant's request for relief from the specification requirement.

The Government contends that although it was aware of the difficulties encountered by appellant and its masonry subcontractor, it acted upon appellant's various requests with reasonable dispatch and that it agreed to a modification of the specification requirement in timely fashion when it was appropriate to do so.

We find the Government's position to be the correct one.

First, we do not believe that appellant had demonstrated, by a preponderance of the evidence, that its alternative pumpcrete mix proposal was submitted and denied by the Government's letter of January 15, 1976. While we might be inclined to agree with appellant's contention, on brief, that the denied proposal was "suspiciously similar" to that submitted by appellant, the fact remains that they were not identical and that the logical Government recipient has denied knowledge of the proposal. Under these circumstances, and in view of the absence of documentation that might support a showing of transmittal to the Government, we must conclude that such transmittal for some reason, never occurred.

Nor, are we persuaded that the Government's initial denial of appellant's request for relief from the specification was not justified. While it is true that appellant may have experienced difficulty in working with the more course aggregate, its situation did not equate to commercial impracticability. Absent such a showing, the Government had the right to insist on full compliance with the specifications and it was not obligated to automatically agree to appellant's modification even though such a course might appear, in hindsight, to have been the more preferable one.

Finally, we find that the Government acted with acceptable promptness when appellant eventually presented it with the proposal and with the supporting documentation that were ultimately accepted. Again, in our view, it may have been possible for the Government to have reacted more quickly to the travails of appellant and its masonry subcontractor, but we do not believe that it had any obligation to do so. The proper time for appellant to have raised objections regarding the specification requirement, par-

ticularly in view of its claim that the same problems had previously been faced on a companion project, was prior to execution of the contract. Having chosen not to do so, it must bear the consequence of its inaction.

This appeal is denied

ASBCA No. 27521—Local Sales Tax

Findings of Fact

The contract contained the General Provision entitled "Federal, State And Local Taxes" which stated, in part, that:

"Except as may be otherwise provided in this contract, the contract price includes all applicable Federal, State, and local taxes and duties."

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On April 27, 1976, appellant notified the resident engineer that:

"As of April 1, 1976 the 1% Local Option Sales Tax for Richmond County went into affect [sic]. Although this is not a Federal tax, it will result in Gulf Contracting, Inc. being required to pay and bear the burden of this Local Option Sales Tax on material and supplies for the above referenced project." Appellant requested that it be issued a change order to compensate it for the additional expense of the tax (R4, tab A).

The COR responded to appellant's notice by requesting ". . . that you advise this office of the total effect that this new sales tax had on your job. This should be in detail so that it may be properly analyzed" (R4, tab D-1). A second letter from the COR, sent in December of 1976, repeated the request for information regarding "the total effect of this sales tax on your project" (R4, tab D-3).

Appellant, as a result of the Government's requests, began to accumulate records. Its President testified that:

"We had to make a duplicate copy of every invoice of every subcontractor for every purchased item in Richmond County for the duration of the project after the point in time that the sales tax was increased." (Tr. 2/41-42)

Eventually, in March of 1978, appellant gathered "all of the documentation in eight volumes of boxes" and forwarded them to the Government for review (Tr. 2/41). The tax increase claimed approximated $8000 (Tr. 2/66).

On May 30, 1978, after several other letters concerning the question had been exchanged, the COR denied the request for additional compensation (R4, tab D-4).

ASBCA No. 27251

Decision

Appellant, under this appeal, is seeking an equitable adjustment, for the increase in a local option sales tax that was enacted after contract award or, alternatively, for the extra costs that it allegedly incurred in keeping records sufficient to document its claim. We do not believe that compensation on either basis, is appropriate.

While valid state or local taxes might qualify as allowable costs in the original pricing of a contract, the terms of this contract's taxation clause, as quoted above, expressly preclude any adjustment in price based upon changes in state or local taxes that were not accounted for in the initial price. Thus, this clause together with the contract's "Permits And Responsibilities" clause place the risk on appellant for changes in state and local laws, including those imposing taxes, enacted after bid opening. *CECOS International, Inc.*, ENG BCA No. 4865 84-1 BCA ¶ 17,164. In view of this express contract language, there is no basis for compensating appellant for assessment of the local option sales tax which came into existence after contract performance had commenced.

Similarly, appellant's alternative claim based upon the additional expense it presumably incurred in maintaining duplicate copies of invoices and the like, must also be denied. While appellant was requested to advise the Government of the "total effect" of the local option sales tax, there is no indication in the record that it was directed to accumulate records to the extent that it chose to. Indeed, it appears that appellant unilaterally determined that "every invoice of every subcontractor" was necessary to substantiate its claim. While we are not in a position to judge whether procedures of this magnitude were, in fact, prudent or necessary to ascertain whether the relatively modest increases in the sales tax would be considered a compensable change, we can conclude that this was a burden voluntarily assumed by appellant and not one directed by the Government. These costs, to the extend that they are not construed as claim preparation costs, may be allowable as part of appellant's overhead; they do not, however, constitute changes to the contract.

Summary

The appeals in Docket numbers 27521 and 28158 are denied. The appeal in Docket number 27221 is sustained and the matter is remanded to the contracting officer for further negotiation on the question of quantum.

[EXCERPT FROM ARMED SERVICES PROCUREMENT REGULATIONS]

15-205.17. **Interest and Other Financial Costs. (CWAS-NA)** Interest on borrowings (however represented), bond discounts, costs or financing and refinancing capital (net worth plus long-term liabilities), legal and professional fees paid in connection with the preparation of prospectuses, costs of preparation and issuance of stock rights, and costs related thereto, are unallowable except for interest assessed by State or local taxing authorities under the conditions set forth in 15-205.41. (But see 15-205.24.).

15-205.23. **Organization Costs. (CWAS-NA)** Expenditures in connection with (i) planning or executing the organization of reorganization of the corporate structure of a business, including mergers and acquisitions, or (ii) raising capital (net worth plus long-term liabilities), are unallowable. Such expenditures include but are not limited to incorporation fees and costs of attorneys, accountants, brokers, promoters and organizers, management consultants and investment counsellors, whether or not employees of the contractor. Unallowable "reorganization" costs include the cost or any change in the contractor's financial structure, excluding administrative costs of short-term borrowings for working capital, resulting in alterations in the rights and interests of security holders whether or not additional capital is raised.

15-205.24. **Other Business Expenses.** (CWAS) Included in this item are such recurring expenses as registry and transfer charges resulting from changes in ownership of securities issued by the contractor, cost of shareholders' meetings, normal proxy solicitations, preparation and publication of reports to shareholders, preparation and submission of required reports and forms to taxing and other regulatory bodies; and incidental costs of directors and

committee meetings. The above and similar costs are allowable when allocated on an equitable basis.

15-205.41(d) **TAXES (CWAS-NA)** Any refund of taxes, interest, or penalties, and any payment to the contractor of interest thereon, attributable to taxes, interest, or penalties which were allowed as contract costs, shall be credited or paid to the Government in the manner directed by the Government, provided any interest actually paid or credited to a contractor incident to a refund of tax, interest or penalty shall be paid or credited to the Government only to the extent that such interest accrued over the period during which the contractor had been reimbursed by the Government for the taxes, interest or penalties.

15-205.50. **Facilities Capital Cost of Money. (CWAS-NA)**

(a) Facilities capital cost of money (Cost of Capital Committed to Facilities) is an imputed cost determined by applying a cost of money rate to facilities capital employed in support of Defense contracts. A cost of money rate is derived from a common source and uniformly imputed to all contractors. Capital employed is determined without regard to its source as between equity or borrowed capital. The resulting cost of money is an imputed cost and is not a form of interest on borrowings as discussed in 15-205.17.

(b) Facilities capital cost of money is allowable cost provided (i) the contractor's capital investment is measured, allocated to contracts, and costs in accordance with 3-1300, and (ii) the contractor maintains adequate records to demonstrate compliance with item (i).

(c) Cost of money for facilities capital need not be entered on the company's books of account. However, a memorandum entry of the cost shall be made. All relevant schedules, cost data and other data necessary to fully support the entry shall be maintained in a manner to permit audit and verification.

(d) Cost of money which is calculated, allocated and documented in accordance with these regulations shall be deemed an "incurred cost" for cost reimbursement purposes pursuant to the payment provisions of applicable cost type contracts. See E-509.5 re: applicability of cost of money for progress payment purposes under fixed-price contracts.